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DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

★CARS★ SHOP EQUIPMENT TRUCKS ★★AVIATION★★ PARTS ACCESSORIES ★TIRES★

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WILLYS-OVERLAND OFFERS NEW LINES

Free Wheeling on New Studebaker 6

CAR PRICED AT $795 TO $995; 70 HORSE POWER

Numerous Mechanical And Body Improvements Made

SOUTH BEND, Ind., Dec. 31.—Introduced for the first time at the New York show, Studebaker is exhibiting its new low-priced Six. Entirely redesigned as to appearance and now incorporating free wheeling under positive gear control, this model with its seventy horse power is put forward as the most powerful car ever offered for the price, which ranges from $795 to $995.

According to Studebaker officials the success which has attended the introduction of free wheeling in the new series President and Commander Eights announced last summer, has convinced the manufacturers of the feasibility of offering this feature on all models of the line and this is now the case.

The installation in the new Six is the same as as in the larger cars, the free-wheel unit being an integral part of the transmission. It replaces the high and second speed slider gears of the conventional transmission, the only added units being the constant mesh helical gears on the main shaft which contribute very notably towards silence of operation.

While the fundamental design of

(Continued on Page 11)

31ST NATIONAL SHOW READY FOR NEW YORK OPENING TOMORROW

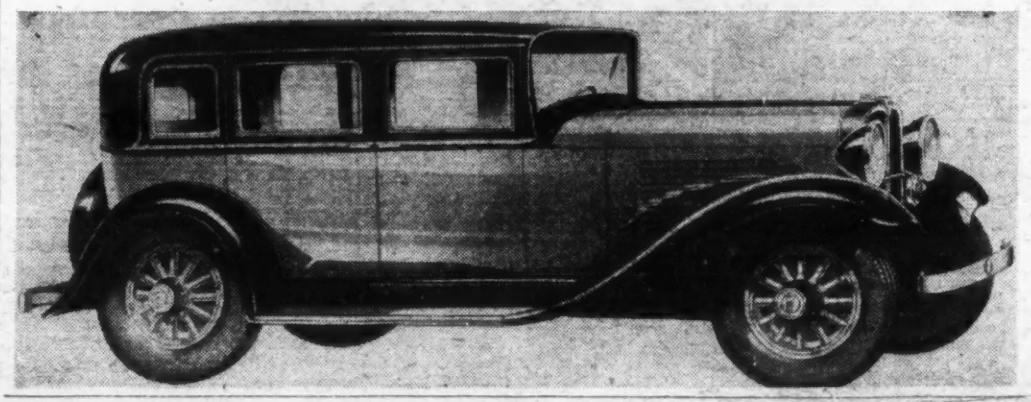
New York, Dec. 31.—With nearly 200 exhibits in place, showing approximately 300 complete cars, chassis and commercial vehicles, the stage is set for the opening Saturday of the 31st National Automobile Show in the Grand Central Palace.

The National Automobile Chamber of Commerce with the co-operation of the Motor and Equipment Association, has prepared, officials say, probably the most interesting exhibition for the 1931 show yet revealed to the public, and with the view to accommodating larger throngs than ever before, has decided to initiate a Sunday presentation, opening the show that day at 2 o'clock and closing at 10.30.

Beginning Monday, the hours are 10 a. m. to 10.30 p. m. The shop equipment section on the fourth floor will admit only the trade until

(Continued on Page 2)

1931 Willys 6 Sedan on 110 Inch W. B.



1931 Auburn Program Delivered by Faulkner To Paris by Phone-Radio

Auburn, Ind., Dec. 31.—Auburn's 1931 program for Europe was delivered today over approximately 2,000 miles of wire and 3,000 miles of ether when R. H. Faulkner, vice-president, sat in his office at the administration building here and gave the new program by phone and radio to Howard Nedeau at Paris, France.

Nedeau reported that the cord front drive car had now reached third place in sales in Europe in the twenty-five hundred dollars class and upward and that indications were that 1931 would show an even more decided acceptance.

GENERAL ELECTRIC ELECTS SEVERAL NEW OFFICERS

Schenectady, N. Y., Dec. 31.—The election of several officers to new posts and the retirement of others were announced yesterday by Gerard Swope, president of the General Electric Company, following a meeting of the board of directors.

Charles E. Wilson and T. K. Quinn have been elected vice-presidents and H. H. Barnes has been elected a commercial vice-president in charge of the New York district. J. L. Buchanan was elected president of the General Electric Supply Corporation, a subsidiary.

Charles E. Patterson and Cummings C. Chesney will retire as vice-presidents tomorrow. Mr. Patterson will also retire as president of the General Electric Supply Corporation, but will continue to serve as a director of the various associated companies having to do with the sale of merchandise and supplies. Mr. Chesney has been elected an honorary vice-president of the company in recognition of his more than forty years of service with it.

P. B. Zimmerman, sales manager of the refrigeration department, has been appointed manager of the department, succeeding Mr. Quinn.

WHOLESALE, RETAIL CAR FINANCING OFF SHARPLY IN OCTOBER

Washington, Dec. 31.—The steady decline in automotive dealers' inventories was reflected today in the latest reports of 482 financing concerns, which show that wholesale financing in October was the lowest of the year thus far, with a total of $35,962,248, as compared with $45,386,952 in the previous month and $63,640,986 in October of last year.

For the January-October period of this year, wholesale financing amounted to $596,237,924, as compared with $612,256,176 in the corresponding months of last year.

Retail financing in October also took a sharp drop, with a total of $81,503,844 which was advanced on 201,458 motor vehicles, of which 39 per cent. were new cars, 59 per cent. used cars and 2 per cent. cars in the unclassified division.

Installment buying, however, was in excess of that of last January when $73,618,802 was advanced on 166,151 cars, which was the lowest month of the ten-month period for which figures are available.

The average value per car in October was $405, largely accounted for by the preponderance of used car financing.

In new car financing, installments in October amounted to $45,750,651, representing a sharp decline from

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TODAY

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WILLYS-OVERLAND PRICES FOR 1931

WILLYS SIX Model 97	
Touring	$545
Roadster	495
Coupe	565
Club sedan	625
Sedan	675
½-ton commercial chassis	395
Model 98-D	
Victoria coupe (wood)	$795
Victoria coupe (wire)	850
Sedan (wood)	795
Sedan (wire)	850
WILLYS EIGHT Model 8-80 D	
Victoria coupe (wood)	$995
Victoria coupe (wire)	1,095
Sedan (wood)	995
Sedan (wire)	1,095
WILLYS-KNIGHT Model 66-D	
Victoria coupe (wood)	$1,095
Victoria coupe (wire)	1,195
Sedan (wood)	1,095
Sedan (wire)	1,195

CHRYSLER SEES 1931 OUTPUT OF 4,000,000

New York, Dec. 31.—Expressing confidence that 1931 would see a moderate upturn in automobile production, Walter P. Chrysler, president of the Chrysler Corporation, today issued the following statement on the business outlook:—

"Production and distribution of automobiles is subject to practically the same influences as those which affect the course of general business. In so far as the latter is concerned, Chrysler Corporation looks forward to a gradual improvement in 1931, largely determined, however, by the degree to which people resume their normal purchasing. Notwithstanding stock market liquidation and unemployment, the latent purchasing power of the country, corporate and individual, is enormous. When it throws off its hesitancy and emerges into action

(Continued on Page 3)

REDESIGNED AND REVISED WILLYS, WILLYS-KNIGHT

Sixes and Eights Have Price Range $495 To $1,200

TOLEDO, O., Jan. 1.—Willys-Overland presents a complete redesigned and revised line of automobiles for 1931. Featuring economy and in line with the demand of the public for the maximum car at minimum price, the new line includes a 113-inch wheelbase six at $795, a 121-inch eight at $995, a Willys-Knight, also on 121-inch chassis, at $1,095, and as a spectacular move in the low-priced field a six on a wheelbase of 110 inches with a price range of from $495 for the roadster up to $675 for the six-window sedan.

Throughout the entire price line, which now extends from $495 to $1,200, the cars are distinguished by longer, roomier and wider bodies, greater riding comfort and a speed and power performance which is claimed to set a new high standard over any previous Willys-Overland developments. It is stated that there are more than 100 constructional changes, as compared with the previous line of cars made by this company.

As a bid for volume sales, the entire line of cars is distinguished by features which have been added to

(Continued on Page 10)

11 MONTHS NEW CAR REGISTRATIONS

COMPLETE new passenger car registrations in the United States for the first 11 months of 1930 by makes and states appear on pages 6 and 7 of this issue, with comparative figures for the same period in 1929. This is the first publication of these figures anywhere.

Commercial car registrations for November by makes and states, with comparative figures for November, 1929, will be found on pages 8 and 9. Commercial car registrations for the first 11 months of 1930 by makes and months will be found on page 5, with comparative figures for 1929.

DURANT SHOWS 1931 LINE TO DEALERS AT LANSING TODAY

Lansing, Mich., Dec. 31.—Durant Motors will stage its first exhibition of the 1931 line of Durant motor cars here Friday, when nearly 400 dealers gather at the Lansing plant to view the new cars and to discuss 1931 policies with factory executives.

Durant's offering to the automobile public during the next year will consist of a four-cylinder car and two six-cylinder models. The four, model 610, is to be made in three body types; the 612 is to be manufactured in four body styles, and the 614, the leader of the Durant line, will be made in the de luxe coupe and the de luxe sedan.

In addition to its own models for 1931, Durant Motors also holds the American Mathis contract for manufacture of 100,000 small Mathis cars.

All models of the new Durants are built on lower lines, and all boast exceptional interior trim and furnishings. Radical mechanical changes have been avoided, but the 614 de luxe is powered with an improved six - cylinder Continental motor, and is equipped with a new improved radiator and thermostatic winterfront.

All models are built on the same wheel base. Four forward speeds are no longer a feature of the 614, which is to be manufactured with the conventional three speeds.

The exclusive Durant "Pullman" device is standard equipment on the 610 and 612, and may be installed at small extra cost on the 614. The device converts sedan interiors into a comfortable sleeping couch.

Factory production on the new models will begin early in January, according to H. W. Alger, treasurer of the corporation and assistant to W. C. Durant.

CHRYSLER SEES 1931 OUTPUT OF 4,000,000

(Continued from Page 1)

business all around will begin to resume its forward stride," he stated.

"Our estimate of the immediate outlook for the automobile industry, in terms of possible production of passenger and commercial cars during 1931, is 4,000,000, as compared with an actual production this year of approximately 3,500,000. There is no doubt that automobile buying, as well as that of other products and commodities, has been affected by a substantial volume of what might be called suppressed demand, and that there is consequently an accumulation of needs which sooner or later must be translated into actual purchase.

"This is probably more true of automobiles than of other things. It is very clearly indicated, too, by increased gasoline consumption this year, as against last year, that people are using up cars without making normal replacements.

"Another favorable factor in the current situation is that stocks of new cars are relatively low. It is difficult to arrive at any accurate figures of stocks on hand, but it would be conservative to say that they are perhaps 35 or 40 per cent. below what they were a year ago.

"Our view for the longer range is indicated by the fact that the year just ending has been one of intense preparation for a business revival which we believe will not only demand a larger volume of production and greater values, but will also reward those in the industry who have made the most effective use of this period of lessened activity to develop new ideas, improved technique, better prices and better ways of doing things," said Mr. Chrysler.

Tire Manufacturers Plan Price Reduction to Meet Mail Order Competition

New York, Dec. 31.—Leading tire manufacturers probably will announce a retail price reduction on tires within the next few days, according to Dow, Jones. Ever since the sharp reduction in tire prices announced by the mail order houses in their mid-winter "flyer" catalogues, the tire companies have been discussing the advisability of reducing retail tire prices.

Although considerable difference of opinion exists in the trade as to the advisability of attempting to fully meet the mail order reduction, general consensus is that some reduction is necessary. The average weighted reduction made by Sears Roebuck and Montgomery Ward in their mid-winter "flyer" was approximately 12 per cent. A similar reduction by the manufacturers would be necessary to place manufacturers' tires in the same relation to the mail order product as previously existed.

Any reduction at all in retail tire prices will bring them to the lowest point in the history of the industry. On November 1 last leading manufacturers advanced price schedules from 2½% to 5%. At the same time, however, discounts to dealers were raised to approximately 25% from 21¼%, thereby counteracting the higher retail prices quoted by the manufacturers.

TRADE-MARK PROTECTION GUARANTEED TO U. S.

Washington, Dec. 31.—Protection of trade-marks and trade names and the repression of unfair competition is guaranteed American automotive and accessories industries under the provisions of a general inter-American convention for trade-mark and commercial protection which has been ratified by the United States, Cuba and Guatemala.

These agreements are now in effect in these countries, and will become effective in all other Pan-American countries as soon as the respective governments have taken the necessary action of ratification.

Under the terms of the proctocol American manufacturers can obtain protection for trade-marks in countries other than their own by applying direct to the proper office of each signatory nation or through the Inter-American Trade-Mark Bureau in Washington.

NEW YEAR PRESENTS NEW PROBLEMS–SLOAN

New York, Dec. 31.—The following New Year's statement is issued by Alfred P. Sloan, Jr., president of General Motors Corporation, in response to requests from a number of sources:

"As we enter the new year it is important, I believe, for us all to look ahead rather than look behind. Even though we may carry over some problems from 1930, the new year will demand a different approach to these problems and a different mental attitude toward the future.

"Throughout 1930 every one was engaged in comparing conditions at home and abroad with conditions prevailing in 1929 without realizing that 1929, in one way, was as abnormal as 1930 was in another way. Comparisons, under these conditions, were not sound. Optimism and pessimism were both exaggerated.

"But 1931 is a new year. We should enter it with new ideas, new measures, new confidence and new hope. Business this year will be exactly what we make it—no better and no worse. It is largely within the province of the American people to restore the economic equilibrium of the world, and if our attitude toward the new problem of the new year is constructive rather than critical, we shall make greater progress in 1931 than we did in 1930."

ERSKINE SEES NEED OF REAL LEADERSHIP

South Bend, Ind., Dec. 31.—Whenever consumers and investors have convincing evidence that prices have reached bottom, increased buying will begin and the machinery of production, distribution and employment will function in a more normal manner, says A. R. Erskine, president of Studebaker Corporation.

"What the country needs is leadership which will establish confidence in existing prices," he said. "Practically all producers, distributors, consumers and investors have been demoralized from the continued liquidation of property at sacrifice prices and this debilitating process must cease before prosperity can return. Liquidation is the process of receivership and despair.

"Is the American standard of living to be challenged by the presumption that present prices represent the true value of the property of our people? Is cost of production no longer the true measure of value? We have been liquidated to a frazzle. Confidence awaits the pulmotor of stability in present price levels and our national psychology needs a doctor."

FEDERAL MOTOR TRUCK PLANS BIG EXHIBITION AT NEW YORK SHOW

Detroit, Dec. 31.—Among the many automotive concerns which will participate with complete floor displays and supplemental distributor meetings and banquets during the 1931 Automobile Show in New York, January 3 to 10, is the Federal Motor Truck Company of this city.

The complete Federal display at Section F on the third floor of the Grand Central Palace, where the show is to be held, will include a model equipped with a Heil 600-gallon tank, and other interesting models are equipped with a canopy express body, a special pie delivery body, dump bodies with hoist and sleeper cabs.

Federal officials, including President M. L. Pulcher, will talk on commercial car engineering and design at the afternoon and evening meetings in the Commodore Hotel. Distributors and salesmen will also hear of new sales promotion plans and the advertising campaign for 1931.

There will also be a business session and a banquet for all Federal distributors and their salesmen. Both of these meetings will be held on January 7 at the Commodore Hotel, Federal headquarters during the show.

SPARKS from DETROIT

Packard's Generosity

* * *

Ford Investment Fund

* * *

Kettering Development

Chris Sinsabaugh—Detroit Editor

NOT until a grateful employee wrote a letter to the newspapers did Detroit discover that the Packard Motor Car Company has recognized present conditions among wage earners, and of its own accord lowered the rents on the 150 homes owned by the company and which are occupied by Packard workmen. It was a graceful act on the part of President Alvan Macauley and the modesty he displayed is proof that the rent reduction was not made for publicity purposes.

Not only was the rent on each home reduced $11 a month, but for good measure the December rent was waived. Those who had paid it got their money back. Furthermore, to help along, the company will collect the rent in two equal installments each month.

"This will continue until business conditions in general become more normal, when rents will be restored to their proper figure," the company states in the letter to the workmen.

* * *

FORD employees who are in the company's investment fund will get 10 per cent. returns on 1930. The company reports that there will have been a distribution of approximately $2,000,000 when the checks for the second half of the year go forth this January.

This Ford investment plan was started in 1920. In the eleven years employees in the United States have collected approximately $22,000,000. This plan is open to Ford employees 21 years of age and over, and the employee may deposit up to one-fourth of his wage or salary, a return of 6 per cent. being guaranteed. About 20 per cent. of the employees make use of this plan.

* * *

BUICK employees at the Flint plant were discussing the interesting points about a 1908 model as disclosed by an old photograph, showing at the wheel George Higgins, at that time foreman of the final accessories department. They noted the right hand steer, the brass radiator shell and lamps, the bulb horn and all those things which we think look queer these days. And Higgins remarked that when the car was built it took from thirty to forty days to paint and varnish the all-wood panels of the body.

Nowadays the average body job in the average plant goes through the paint operation in two days, thanks to the spraying and quick drying process developed by Duco. We seldom remember those thirty and forty-day operations. And yet the new method has been with us only about seven years.

C. F. Kettering, president of the General Motors Research Corporation, is given the credit for this time-saving operation. He held that the old way could be improved upon, thought out how it could be done, then turned the job over to L. C. Williams, then a Du Pont chemist and now Duco sales manager, to develop.

It is a matter of record that Williams' first customer was the Oakland Motor Car Company, and that the first Ducoed car to be exhibited in a national automobile show was an Oakland in the 1924 show.

* * *

THE average medium priced car nowadays is given two double coats, and in a rush one can be sprayed in half an hour. With the highest priced cars some get as many as fourteen to sixteen coats. One of the "big boys" is said to need eight gallons of Duco to give it the finish its manufacturers are seeking.

When it is realized that there is a 75 per cent. saving in production costs between the old and new way, not to overlook the saving in time, the Kettering development is better appreciated.

31ST NATIONAL SHOW READY FOR NEW YORK OPENING TOMORROW

(Continued from Page 1)

5 o'clock each day, after which hours the public will be welcomed.

The 1931 models shown have more sustained and higher speeds, improved riding qualities, low cost of operation and lower prices. An increasing number of multi-cylindered engines are included in eights, twelves and sixteens. While there are no radical changes in body lines for 1931, designers have contrived to add to rhythmic flow and closer harmony. The color trends in the main are somber, with a leaning toward pastel hues.

31st triumphant year of the National

AUTO SHOW

JAN. 3 to 10

SPECIAL—Open on Sunday, Jan. 4, 2 p.m. to 10.30

The world's largest industry displays its masterpieces—three decades of progress. Fifty-one exhibitors of cars and trucks—300 models—See the latest sixteen and twelve cylinder creations—new eights, sixes, fours—Modish bodies—modern accessories. Shop equipment section (open to public after 5 p.m.) on 4th floor.

OPENS TOMORROW, JAN. 3, at 2 P. M. Daily thereafter 10 A.M. to 10.30 P.M. Admission 75c

GRAND CENTRAL PALACE

Lexington Avenue and 46th Street, New York City

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Loans Trucks to Customers While Theirs Are in Shop

Philadelphia Motor Service Company Does Day and Night Jobs on Passenger as Well as Commercial Cars And Sells Stewarts

DAY and night servicing operations on passenger cars and trucks are performed by the Philadelphia Motor Service Company, occupying a modern one-floor structure, purposely built for it and containing 185,000 square feet of floor space, at Front Street and Columbia Avenue, Philadelphia. The business was established for the first seven years of its existence at 19th and Buttonwood Streets, but satisfied customers as a result of good workmanship and square dealing made a new building with greater facilities necessary at the end of that period and it was decided to move to the present more central location.

The proprietors, George F. Barcalow and Edward J. Dougherty, conduct a dual business, namely, that devoted to general motor vehicle servicing, and selling Stewart trucks, parts and service as distributors.

"From long experience," says Mr. Barcalow, "we have noted that three things are necessary to give good service: To complete the work at the time promised to produce a first-class job in every instance, and to effect a saving for the customer. We invite free inspection of the vehicle in the presence of the owner and we guarantee all work against defective material and workmanship for a period of ninety days after delivery."

In addition to its day service and repair work, the company keeps open six nights a week, closing at 1 o'clock in the morning and reopening at 6.30 a. m. There are twenty-six persons employed in the organization, of which number eighteen are in the shop. Three men are always on the night shift. This "daylight" shop is provided with unusually complete equipment for servicing, both light and heavy, including labor-saving devices for lowering costs. A feature not found in most shops of this nature is an electrical repair department. The general equipment includes high-speed lathes, grinding machines, drill and arbor presses, motor stands and mechanical cranes for lifting out heavy parts. Operations cover, among other things, straightening frames for axles, welding, motor rebuilding, regrinding cylinders and the usual phases of automotive electrical work. The work benches extend along the walls.

Close personal supervision is a feature of all work. Unless a job is exceptionally long, or complex, it is finished so the customer may have his car or truck the morning after he has brought it to the shop. A special accommodation that is much appreciated is that of loaning trucks of suitable type to customers whose own vehicles must be held in the shop for long jobs. If the work on a customer's truck is considerable, a substitute truck as nearly like his own as possible is loaned to him without charge, for the time his truck is in the shop. A nominal charge is made if the work on the customer's vehicle is comparatively light. In other words, the amount or cost of the work governs the charge if any, in inverse proportion, for the loaned truck. There are always enough trucks, both closed and open jobs, on hand for loaning purposes.

Shop work is obtained from the operators of fleets, some of which have been on the company's books for years; from independent, or individual haulers; from automobile dealers and distributors; from insurance companies on wrecks and from passenger car owners. The company does fleet work on a contract basis, taking care of the units at a flat rate.

The company has three cars for road service and ample towing equipment.

While the company does not solicit work by personal contact outside of Philadelphia, the city is well covered by Mr. Dougherty of the partnership and by a salesman who devotes his time to the work. Each customer is called on every thirty to forty-five days. Twice a year a special letter is sent to customers on the mailing list, telling them of the shop's facilities and suggesting needed and seasonable servicing operations.

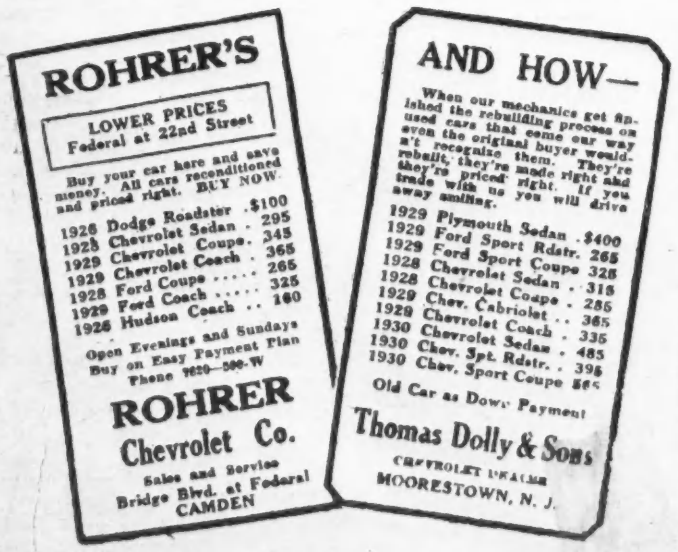
Repair work contacts have brought about truck sales, one branch of the business thus helping the other.

Free Rides Sell Cars

Ford
PRICES REDUCED
Now In a Great Sale Of
USED CARS
Due to large volume of New Car Sales, we have on hand an unusually fine selection of used cars. To effect quick turnover on this stock we have marked them at generous reductions, producing prices that are most tempting. Come—look them over. You will be pleased with the quality and more than satisfied that the opportunity for purchase is unusual.
FREE AIR RIDE
In Goodyear Blimp "Defender" Or In Ford Tri-Motored Plane
WITH EACH CAR PURCHASED IN THIS SALE!
Guarantee And Free Service Certificate
With All Model "A" Used Fords
CARS OF MANY MAKES AND MODELS ALSO INCLUDED
Present Prices Good Until January First. Early Choice Is Best Choice—Come Today
MIAMI MOTOR SALES CO.
USED CAR DEPT. — 2075 N. E. 2ND AVE.
Telephone 2-5733
New Car Salesroom and Service Dept.
2201 N. E. Second Ave.
Service and Parts Dept. Open Till Midnite Daily Except Sunday.

THE MIAMI MOTOR SALES COMPANY of Miami, Fla., is offering a unique premium with each used car sold during a special sale now being sponsored by them at their used car lot on N. E. 2d Avenue. A free air ride in either the Goodyear Blimp Defender, now stationed in Miami and to be used for sight-seeing trips during the winter season, or in a Ford Tri-Motored plane, goes with each sale

Successful Used Car Ads


ROHRER'S
LOWER PRICES
Federal at 22nd Street
Buy your car here and save money. All cars reconditioned and priced right. BUY NOW
1926 Dodge Roadster . $100
1928 Chevrolet Sedan . 295
1929 Chevrolet Coupe . 345
1929 Chevrolet Coach . 365
1928 Ford Coupe 265
1929 Ford Coach 325
1926 Hudson Coach . . 160
Open Evenings and Sundays
Buy on Easy Payment Plan
Phone 7620—500-W
ROHRER
Chevrolet Co.
Sales and Service
Bridge Blvd. at Federal
CAMDEN
AND HOW—
When our mechanics get finished the rebuilding process on used cars that came our way even the original buyer wouldn't recognize them. They're rebuilt, they're made right and they're priced right. If you trade with us you will drive away smiling.
1929 Plymouth Sedan . $400
1929 Ford Sport Rdstr. 265
1929 Ford Sport Coupe 325
1928 Chevrolet Sedan . 315
1928 Chevrolet Coupe . 285
1929 Chev. Cabriolet . . 365
1930 Chevrolet Coach . 335
1930 Chevrolet Sedan . 485
1930 Chev. Spt. Rdstr. . 395
1930 Chev. Sport Coupe 565
Old Car as Down Payment
Thomas Dolly & Sons
CHEVROLET DEALER
MOORESTOWN, N. J.

TWO SOUTH JERSEY Chevrolet dealers are selling used cars aided by small classified display ads, as are reproduced above. Thomas Dolly & Sons of Moorestown, N. J., features its rebuilding of used cars. The Rohrer Chevrolet Company of Camden, N. J., features reconditioned cars priced right

CHEVROLET DEALERSHIP, ONE OF 11 LARGEST IN U. S., CHANGES OWNERSHIP

Phoenix, Ariz., Dec. 31 (UTPS).—In connection with the recent purchase here of the Don Gilmore, Inc., Chevrolet dealership, by Ed Rudolph, it is announced that Gilmore will go to Los Angeles, where he will open a new Chevrolet dealership in the metropolitan area. He was former vice-president of the Phoenix Motor Car Dealers' Association.

Ed Rudolph takes over one of the eleven largest dealerships in the United States, it is said, with assumption of his duties as Chevrolet dealer in Phoenix. He has set up offices at his present location, 316 East Adams St., where he has been in business since 1913. His organization will continue the servicing of Ford cars. Approximately eighty employees will be connected with the new ownership.

Zone officials for the Chevrolet car out of El Paso, Tex., are here directing the transfer of the dealership.

FORD DEALER PURCHASES TIRE DISTRIBUTORSHIP

Longview, Wash., Dec., 31.—Acquisition of the Kelly-Springfield tire distributorship for Cowlitz and Wahkiakum counties is announced by the Fred Hess Motor Company, Longview Ford dealer. Hess has purchased the entire stock of the Manning Tire Service Company, the former distributor. R. K. Miles, formerly associated with Hess, has come here from Portland, Ore., to assume charge of the tire business.

PACKARD CO. OF N. Y. INSTITUTES COURTESY SERVICE AT HARTFORD

Hartford, Conn., Dec. 31.—The branch here of the Packard Motor Car Company of New York has instituted an owner's courtesy service which has proved decidedly popular among local Packard owners.

The Packard owner who feels that he has not the time to get his car to the company's station has only to call the main office and a service man on a motorcycle, finished in white and lettered in black, makes the call. If the service man determines that the work is of such nature that it can best be done at the main plant, he simply attaches his motorcycle, which is fitted with two extra side wheels, to the automobile. The driving wheel of the motorcycle is raised above the ground. The machine may be used as a tricycle if desired.

The object of this service is to have service work done the Packard way, thus offering the owner assurance that his requirements will be filled properly. Incidentally, the courtesy service requires the service of only one man and he brings his motorcycle along with him.

1,000 AT OPENING OF CHEVROLET DEALERSHIP

Smithfield, N. C., Dec. 31.—It is estimated that more than 1,000 persons attended the informal opening here of the Holleman Chevrolet Company on Main Street.

NEW FORD DEALER WILL BUILD SHOW ROOMS

Portland, Ore., Dec. 31.—E. G. Simmons, recently appointed a Ford dealer in Portland, is soon to start construction on a new building at 28th and Pacific Streets which his firm will occupy. Until completion of it, the Simmons organization is occupying temporary quarters at 16th Street and Sandy Boulevard. Prior to coming to Portland, Simmons was for sixteen years associated with his brother Lawrence in the Ford business at Eugene, Ore. Lawrence Simmons is continuing the Eugene organization under the name Simmons Company, while Earl Simmons will operate in Portland as E. G. Simmons, Inc.

CHEVROLET DEALER CHARTER

Woodruff, S. C., Dec. 31.—Eskew Chevrolet Company, local Chevrolet dealership, has been incorporated. Officers are J. J. Cudd, president; W. T. Eskew, secretary and treasurer.

VISIT
CHRYSLER
MOTORS
HEADQUARTERS
during the
AUTO SHOW

Chrysler Motors welcomes every dealer to the 1931 Auto Show and especially to Chrysler Motors Headquarters at the Chrysler Building.

Visit the Chrysler Motors displays. See the Chrysler, Dodge, De Soto and Plymouth passenger cars—the Dodge trucks and taxicabs—the Fargo Motor Coaches—the Chrysler marine engines.

Talk with the officials of the various divisions.

Learn what Chrysler Motors is doing and how it is thinking in connection with the selling season ahead.

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HEADQUARTERS—*Chrysler Building—Forty-Second and Lexington, New York City, New York*

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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Industrial Flexibility

FROM many of the leaders in the automotive industry there have recently come assertions to the effect that in our particular branch of manufacturing we must increase our flexibility. I. A. Miller, president of Willys-Overland, called attention to this some weeks ago, when he remarked that automobile manufacturers must place their businesses on a basis where they could make money even in periods when lessened demand made maximum production schedules impossible.

Alfred P. Sloan, Jr., president of General Motors, had the same idea in mind when he said in his recent radio greeting to his organization: "With a change in the economic or business cycle, there comes a realization of this fact (that we cannot always remain at the top of the cycle) and with that realization comes an opportunity to revalue our methods and our policies, our ways of thinking and of doing and an opportunity to inject into our lives and actions a sounder and more constructive method of conducting our affairs."

The history of industry and commerce has been a consistent series of business cycles. Trade thrives and recedes. Humanly enough we have been prone to take the periods of prosperity and make our plans on the basis of that maximum production, refusing to allow for the inevitable downward movement until it actually is with us.

Our automotive industry is based on the foundation stone of production. It is by increasing production that we have been able to produce better and better motor vehicles at a constantly lowered price range. This operation has been the wonder of the industrial world. At times it has seemed impossible that the industry could go on giving more and more value and steadily reduced prices.

Increased production is the obvious method of yielding lower prices, as well as an improved product. The more units manufactured the thinner becomes the spread of costs per unit. However, mass production is not the only method by which costs may be reduced. Increased efficiency of operation in other ways will yield the same results.

It should be the endeavor of the automotive industry to achieve maximum efficiency in every branch of its business. There still is ample opportunity to reduce the cost of distribution, a branch of activity that has lagged behind the engineering division. In the service field there is still opportunity for increasing efficiency and lifting the income of the individual operator in this branch of the industry.

Mass production will continue to be the foundation stone of our industry. The normal replacement market assures that. American automotive factories will continue to produce in quantities that will insure the continuance of motor transportation as a major factor in our national life.

But in addition our individual manufacturers will have to place their activities on a basis of efficiency that will enable them to meet the conditions prevailing at the bottom of the business cycle, as well as those existing during periods of high prosperity.

Our Population Shifts

ONE of the most remarkable phenomena of recent years has been the steady shift of American population from rural to urban districts. The latest figures given out by the Census Bureau show that at the present time 56 per cent. of our people live in communities with 10,000 or more inhabitants, or in districts with 1,000 or more inhabitants to the square mile. The last similar statement of this sort showed 52 per cent. of our people resident in urban communities.

This drift to the cities is going to have a powerful effect on marketing and the problems which are involved in that branch of business.

OUTLOOK FOR 1931

By GERARD SWOPE
President General Electric Co.

IT is always difficult to look ahead, and particularly so this year.

We, in the electrical industry, possibly have had more to be thankful for during the past year than those in many other lines of endeavor, and this may also be true of what the future holds for us. New methods in industry, with electricity as their base, are being continually introduced; new uses are constantly being found for electrical apparatus and appliances in the home and new devices are being developed to meet these needs. The statistics of the electric light and power companies throughout the United States for 1930 reflect these tendencies, showing that there has been but a slight decline in the use of electric power by commercial organizations and in industry, and that the electric energy used in the homes, even in this year of depression, has increased over last year.

We expect this course to continue, and therefore look forward with confidence, believing that the electrical manufacturing business, as a whole, in the new year should surely be no worse and possibly somewhat better than in 1930.

COMING EVENTS

JANUARY

3-10—**New York.** National Automobile Show.
5—**New York.** Rubber Manufacturers' Association convention.
6—**New York.** National Automobile Chamber of Commerce annual show banquet at Hotel Commodore.
5—**New York City.** National Automobile Dealers' Association convention.
7-10—**East Orange, N. J.** Automobile Show of the Oranges and Maplewood.
8—**New York City.** Society of Automotive Engineers' annual dinner.
10-16—**St. Louis, Mo.** National Roadbuilders' show and convention.
10-17—**Buffalo, N. Y.** Automobile Show.
10-17—**Milwaukee, Wis.** Automobile Show.
10-17—**Philadelphia.** Automobile Trade Association annual show.
10-17—**Newark, N. J.** Automobile Show.
11-17—**Cincinnati, O.** Automobile Show.
15-17—**Evansville, Ind.** Automobile Show.
17-24—**Boston.** Automobile Show.
17-24—**Detroit, Mich.** Annual Show. Convention Hall.
17-24—**Hartford, Conn.** Automobile Show at state armory.
17-24—**Montreal, Can.** National Motor Show of Eastern Canada at Stadium.
17-24—**Baltimore, Md.** Automobile Show.
17-24—**Pittsburgh, Pa.** Automobile Show.
19-22—**Chicago.** National Wheel and Rim Association convention at Edgewater Beach Hotel.
19-23—**Detroit, Mich.** Society of Automotive Engineers' annual meeting.
19-24—**Omaha, Neb.** Automobile Show.
19-24—**Elmira, N. Y.** Automobile Show at Armory.
19-24—**Omaha, Neb.** Automobile Show.
19-24—**Louisville, Ky.** Automobile Show.
19-24—**Rochester, N. Y.** Automobile Show.
21-22—**Milwaukee, Wis.** Wisconsin Petroleum Association meeting.
23-24—**Oklahoma City.** Oklahoma Petroleum Marketers' Associtaion meeting.
24-31—**Chicago, Ill.** National Automobile Show.
24-31—**Altoona, Pa.** Automobile Show at Jaffa Shrine Mosque.
24-31—**Allentown, Pa.** Automobile Show sponsored by Lehigh Automobile Trade Association.
24-31—**Cleveland.** Automobile Show.
24-31—**Washington, D. C.** Automobile Show.
24-31—**Albany, N. Y.** Automobile Show.
24-Feb. 1—**Los Angeles.** Automobile Show.
26-27—**Chicago.** National Automobile Dealers' Association convention.
26-31—**Springfield, Mass.** Automobile Show.
26-31—**Syracuse, N. Y.** Automobile Show at Armory.
26-31—**Portland, Maine.** Automobile Show at Exposition Building.
29-30—**Grand Forks, N. D.** North Dakota Division, Northwest Petroleum Institute meeting.
31-Feb. 7—**San Francisco.** Automobile Show.

FEBRUARY

Jan. 31—Feb. 7—**Twin Cities.** Northwest Automobile Show, jointly sponsored by St. Paul and Minneapolis at the Minnesota State Fair Grounds.
2- 7—**Scranton, Pa.** Automobile Show.
2- 7—**St. Louis.** Automobile Show.
3—**Minneapolis.** Auto Trade Association convention.
7-14—**Los Angeles.** Automobile Salon.
7-14—**Kansas City.** Automobile Show.
9-14—**St. Petersburg, Fla.** Automobile Show at Winter Garden.
9-14—**Duluth, Minn.** Twin Ports Automobile Show, held by Duluth and Superior, Wis., dealers.
9-14—**Denver, Colo.** Automobile Show.
11-13—**Chicago, Ill.** American Society of Mechanical Engineers' fuel meeting.
14-19—**Indianapolis.** Automobile Show at State Fairground.
16-20—**San Francisco.** Society for Steel Treating National Western Metal and Machinery Exposition.
21-28—**San Francisco.** Automobile Salon.
21-28—**Quebec, Canada.** Automobile Show.
22-March 1.—**Los Angeles.** Pacific Coast Transportation. Exposition at Shreve Civic Auditorium.
23-28—**Des Moines, Ia.** Automobile Show at Coliseum.
24-26—**Columbus, O.** Ohio Petroleum Marketers' Association meeting.
24-March 1—**Seattle, Wash.** Automobile Show at Civic Auditorium.
25-March 2.—**Camden, N. J.** Automobile Show.

MARCH

6-15—**Geneva, Switzerland.** Eighth Swiss International Automobile Show.
7-14—**Brooklyn, N. Y.** Automobile Show.
11-13—**Detroit, Mich.** Michigan Oil Men's Association meeting.
16-22—**Los Angeles, Cal.** Second Annual Oil Equipment and Engineering Exposition.
19-21—**San Antonio, Tex.** Sixteenth annual meeting, American Association of Petroleum Geologists.
30-April 3—**Indianapolis, Ind.** Eighty-first meeting, American Chemical Society.

CAR FINANCING OFF SHARPLY IN OCTOBER

(Continued from Page 1)

the previous month, but slightly in excess of last January, when the total reached $45,244,894.

The figures show that while the installment total in October was the second lowest of the year thus far, the average value per car, $582, was the highest of any month, which may indicate the buying of higher-priced cars, as compared with the buying of the lower priced vehicles in earlier months of 1930.

For the ten-month period of this year financing new cars amounted to 1,228,215 units on which $690,638,502 as compared with 1,658,559 on which $982,271,208 was advanced in the same period of last year and 1,050,272 on which $666,414,946 was advanced in the January-October period of 1928.

Thus it is seen that while 1928 was regarded as a banner year for the industry, installment financing in the first ten months of this year was far in excess of that for the same period of two years ago.

The strong trend in the buying of used cars was well maintained in October with a total of $33,851,802 advanced on 118,528 cars, as against $35,266,081 advanced on 121,857 cars in the previous month.

For the ten-months' period used car financing totaled $381,133,550, as compared with $400,297,182 in the same period of last year and $257,085,055 in the January-October period of 1928.

The following figures are based on reports received by the Department of Commerce from 492 automobile financing concerns:—

WHOLESALE

1928	Volume in dollars
January	
February	
March	
April	
May	
June	
July	Data Not
August	Available
September	
October	
Total (10 Mos.)	
November	
December	
Total (Year)	
1929	
January	$36,899,813
February	47,962,644
March	61,170,730
April	74,884,909
May	72,291,505
June	63,412,417
July	61,839,467
August	69,959,084
September	60,194,621
October	63,640,986
Total (10 Mos.)	$612,256,176
November	Data Not
December	Available
Total (Year)	
1930	
January	$52,447,062
February	61,244,849
March	77,547,823
April	85,345,770
May	83,659,772
June	53,802,394
July	55,429,935
August	45,411,119
September	45,386,952
October	35,962,248
Total (10 Mos.)	$596,237,924

RETAIL

1928—	No. Cars	Volume & Aver. Total Amount	Per Car
January	104,223	$52,357,754	$502
February	132,366	65,016,842	491
March	195,806	93,581,752	478
April	234,852	113,564,342	484
May	272,310	132,186,344	485
June	264,112	128,167,581	485
July	253,460	123,069,008	486
August	252,658	121,874,690	482
September	209,917	102,516,127	488
October	216,382	104,323,612	482
T'l (10 mos.)	2,136,086	$1,036,658,052	$485
November	181,073	86,828,447	480
December	152,499	73,058,197	479
Total (year)	2,469,658	$1,196,544,696	$484
1929—			
January	157,282	$75,691,601	$481
February	191,078	91,241,901	478
March	305,839	142,117,146	465
April	411,755	172,811,264	420
May	462,897	184,938,915	459
June	387,157	180,098,333	465
July	391,461	180,845,490	462
August	350,477	163,896,492	468
September	300,901	129,447,399	430
October	278,258	126,590,020	455
T'l (10 mos.)	3,177,105	$1,447,678,561	$456
November	210,834	95,000,640	451
December	171,890	80,089,099	466
Total (year)	3,559,829	$1,622,768,300	$456
1930—			
January	166,151	$73,618,802	$443
February	199,947	85,769,608	429
March	316,029	123,786,111	392
April	346,083	146,986,679	425
May	349,136	141,307,160	405
June	341,487	138,520,036	406
July	287,444	119,044,282	414
August	247,574	102,530,439	414
September	219,677	90,466,172	412
October	*201,458	81,503,844	405
T'l (10 mos.)	2,674,986	$1,103,533,133	413

NEW CARS

1928—	No. Cars	Volume & Aver. Total Amount	Per Car
January	49,989	$32,489,265	$650
February	63,798	40,557,252	636
March	96,921	61,072,572	630
April	117,751	74,435,217	632
May	137,259	86,416,000	630
June	121,694	83,198,055	632
July	125,656	79,770,688	635
August	124,859	78,730,798	631
September	100,791	64,754,538	642
October	101,554	64,990,561	640
T'l (10 mos.)	1,050,272	$666,414,946	$635
November	84,633	53,054,598	627
December	63,251	41,709,916	659
Total year	1,198,156	$761,179,460	$635
1929—			
January	78,633	$48,765,872	$620
February	103,680	61,978,964	598
March	166,455	96,881,494	582
April	205,603	116,938,139	569
May	213,125	125,283,993	588
June	204,174	122,037,943	598
July	211,707	124,761,957	589
August	184,365	111,299,259	604
September	158,364	93,950,905	593
October	132,453	80,372,682	607
T'l (10 mos.)	1,658,559	$982,271,208	$592
November	96,392	58,245,687	604
December	74,332	48,061,493	647
Total (year)	1,829,283	$1,088,578,388	$595
1930—			
January	78,729	$45,244,894	$575
February	95,600	53,010,774	555
March	139,387	77,331,961	555
April	171,320	94,085,514	549
May	170,005	94,235,699	554
June	159,942	91,277,619	571
July	130,926	73,595,951	562
August	111,334	63,143,583	567
September	92,367	52,961,856	573
October	78,605	45,750,651	582
T'l (10 mos.)	1,228,215	$690,638,502	$562

USED CARS

1928—	No. Cars	Volume & Aver. Total Amount	Per Car
January	40,978	$13,600,634	$332
February	52,585	16,629,480	316
March	76,449	23,086,811	302
April	88,488	26,934,073	304
May	105,661	31,675,696	300
June	104,462	31,620,291	303
July	97,705	29,336,567	300
August	98,708	30,037,717	304
September	84,736	26,129,024	308
October	90,839	28,034,752	309
T'l (10 mos.)	840,591	$257,085,055	306
November	74,744	23,277,105	311
December	69,560	22,082,179	317
Total (year)	984,895	$302,444,339	$307
1929—			
January	99,031	$22,783,830	$330
February	76,724	24,663,101	321
March	121,512	37,906,986	312
April	185,340	47,221,842	255
May	169,103	51,103,985	302
June	164,385	50,379,886	306
July	162,723	49,104,714	302
August	149,858	45,849,948	306
September	127,948	29,558,269	231
October	135,060	41,724,621	309
T'l (10 mos.)	1,361,684	$400,297,182	$294
November	104,211	32,260,075	310
December	89,943	28,674,443	319
Total (year)	1,555,838	$461,231,700	$296
1930—			
January	81,012	$25,595,605	$316
February	95,786	29,206,443	305
March	166,898	42,477,905	255
April	164,374	48,853,748	297
May	168,488	42,805,413	254
June	170,799	43,074,019	252
July	150,138	42,780,448	285
August	129,997	37,222,086	286
September	121,857	35,266,081	289
October	118,528	33,851,802	286
T'l (10 mos)	1,367,877	$381,133,550	$278

1928—	No. Cars	Volume & Aver. Total Amount	Per Car
January	13,256	$6,267,855	$473
February	15,983	7,830,100	490
March	22,436	9,422,369	420
April	26,633	12,195,052	426
May	29,390	14,094,648	480
June	27,956	13,349,235	478
July	30,099	13,961,753	464
August	29,091	13,106,175	451
September	24,390	11,632,565	477
October	23,989	11,298,299	471
Total (10 mos.)	245,223	$113,158,051	$461
November	21,696	10,496,744	484
December	19,688	9,266,102	471
Total (year)	286,607	$132,920,897	$464
1929—			
January	9,618	$4,141,899	$431
February	10,674	4,599,836	431
March	17,872	7,328,666	410
April	20,312	8,651,283	426
May	20,669	8,550,937	414
June	18,598	7,680,504	413
July	17,031	6,978,819	410
August	16,254	6,747,285	415
September	14,586	5,938,225	407
October	10,745	4,492,717	418
Total (10 mos.)	156,862	$65,110,171	$415
November	10,231	4,494,878	439
December	7,615	3,353,163	440
Total (year)	174,708	$72,958,212	$418
1930—			
January	6,410	$2,778,303	$433
February	8,561	3,552,391	415
March	9,744	3,976,245	408
April	10,389	4,047,417	390
May	10,643	4,266,048	401
June	10,746	4,168,398	388
July	6,380	2,667,883	418
August	6,243	2,164,770	347
September	5,453	2,238,235	410
October	4,325	1,901,391	440
Total (10 mos.)	78,894	$31,761,081	$403

*Of this number 39 per cent. were new cars, 59 per cent. used cars and 2 per cent. unclassified.

MERCHANDISING ACCESSORIES EQUIPMENT

WHOLESALE

DISTRIBUTION SHOP EQUIPMENT REPLACEMENTS

TEXAS JOBBERS LEANING TOWARD REGULAR CLINICS

Plans Underway to Increase Use During Coming Year

Dallas, Tex., Dec. 31 (UTPS).—Automotive jobbers in a great number of points in Texas are leaning more and more to the idea of holding "clinics" at which the shopmen in various points may see actually demonstrated the most modern shop equipment.

These clinics are increasing sales of tools and heavy shop equipment, the jobbers say. Probably the time will never come, jobbers say, when "clinics" will supplant the salesman with the catalogue, but they are supplementing the efforts of these salesmen and are showing just what machinery will do under all circumstances. The jobbers say that is what the shopmen desire.

Clinics will become part of the regular activities of jobbing houses in Texas in 1931. Many of them are going to hold them quarterly, and some of them are going to have the clinics rigged up for operation any time a customer wishes to see machinery in operation.

Among the automotive jobbing houses holding clinics during the past few weeks are: Ferris & Co. of Dallas, the Schoelkopf Company at Abilene, the Dallas Parts Company at Dallas, the Automotive Parts Company at Texarkana, the Fort Worth Rim and Wheels Company at Fort Worth; the Southern pany at Fort Worth, the Southern tonio, the East Texas Auto Parts Company at Tyler, and the Archenhold Auto Supply Company at Waco.

Editor's Column

MERGING of minor chain store systems, or the absorption of these systems by leading organizations, are being carried on more actively than ever before, according to executives identified with that form of business. While it has been generally agreed for years that the consolidation of chain store groups was economically sound, discussions did not make much headway until the present business depression reached an acute stage.

A belief that the chain store business can be conducted on a more profitable basis in 1931 if the number of independent chains is reduced has resulted in a greater willingness among chain store executives to discuss mergers. A broad consolidation movement, it is held, would mean less competition for leaseholds among systems operating in the same field; would result in a larger volume of business, and hence make possible advantageous purchases of goods; would reduce overhead costs. and would eliminate costly price cutting.

During the prosperous years before the current depression, when chain store companies were expanding at a rapid rate, bankers seeking to arrange mergers among them found that the executives were usually not in a receptive mood for such proposals. The seemingly unlimited field for chain store systems, it is said, led their executives to believe that they could expand their chains indefinitely and at the same time maintain their independence. At the end of 1929, however, it had become apparent, bankers say, that expansion would have to be carried on at a slower rate. Many companies, indeed, reversed the trend by abandoning unprofitable stores, which they had opened in the boom periods.

The expansions in which the chain store systems indulged in 1928 and 1929 resulted in some of the smaller organizations finding themselves with inadequate working capital in 1930, it is reported. The depressed state of the securities markets made new financing difficult, and systems which are handicapped by lack of funds are reported now to be planning mergers with larger companies as a solution to their difficulties.

Another factor, which is said to be increasing the trend toward combinations, is the need for expert management. The leading companies have demonstrated during the depression that they were able to meet new problems by increasing competition and declining prices, the bankers say. Not all the smaller companies, however, met their difficulties so satisfactorily, it is held, and consequently the belief has arisen that through mergers adequate management can be provided for the entire chain store business.

THE value of the census of distribution as a measure of existing markets, as a guide to new markets and as a test of merchants' operating efficiencies, is pictured by Edwin B. George, chief of the Market Service Division of the United States Department of Commerce.

Manufacturers and wholesalers, manufacturers of industrial goods and wholesalers and retailers are the three groups who will be most vitally interested and who will find the results most valuable, he points out.

"The census will give us a broad picture of the movement of goods throughout the country and of the channels and the outlets through which they reach the consumer," Mr. George declares. "It will probably indicate a great deal of disproportion and wrongly directed effort. It will provide a good sound basis, the first of its kind on such a scale, for self-help and corrective action by the merchants themselves.

"Every effort is being made to adapt the census returns to the practical needs of every file of American business. The chief of the census distribution, Dr. McFall, and the heads of the wholesale, retail and industrial sections, Dr. Beckman, Mr. Guernsey and Mr. Dewey, respectively, are all working on this problem, in close touch with business organizations."

The sales of individual commodities can be estimated approximately from manufacturers', wholesalers' and reailers' returns. The importance of these discoveries guides to more intelligent and economical market analysis. The value to advertisers was particularly stressed.

"The census is not a cure-all," he warns, "and it is too much to look to these national returns as a corrective for all business ills. Much of the work of utilizing the returns will have to be done by the trades themselves. It is almost a certainty that much confusion, and perhaps actual loss, can be saved the merchant who will thoughfully and conscientiously search for the meaning of the figures he is given in this census."

U S L NAMES LAWSON AS DISTRICT MANAGER

Portland, Ore., Dec. 31.—H. P. Lawson, manager of the battery department of Sunset Electric Company, has been appointed Pacific Northwest district manager for the U S L Battery Corporation. Lawson was district manager for the Willard Storage Battery Company for twelve years and left that position to take the Sunset Electric Company department.

NEW CHAIN WITH 36 GARAGES FOR CHICAGO

Chicago, Dec. 31.—Organization of the Hart Garages, Inc., is announced, together with the information that thirty-six of the company's garages will be placed in operation here within the next two weeks. The plan is to open additional units as fast as possible, extending the system eventually from coast to coast. A group of prominent Chicagoans is reported to be interested in the undertaking. Victor G. Williams is president of the new organization. Albert Hart is general manager.

JOBBER IS HONORED

Tacoma, Wash., Dec. 31.—Homer King, president of Reynolds & King, Inc., automobile accessory wholesalers, with headquarters here, has been elected a trustee of the Tacoma Chamber of Commerce.

OMAHA JOBBER PLANS FOR EXPANSION IN 1931

Omaha, Neb., Dec. 31.—Wright & Wilhelmy Company, wholesale automotive supply and hardware concern, has leased two floors in the Sattley Building, 1001 Jones St., comprising 17,500 square feet of floor space. The two top floors of the Creighton Building, 1007 Jones St., have been leased by the Pacific Warehouse and Storage Company, operator of a fleet of trucks, which has been occupying the remaining seven floors for several years.

A sound investment—Wisconsin Axles; with an uninterrupted record of dividends in low upkeep, freedom from trouble, bigger profits.

WISCONSIN AXLES

WISCONSIN AXLE CO.
Oshkosh Wisconsin

New Commercial Car Registrations for First Eleven Months of 1930, by Months

Months	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	F. W. D.	Fargo	Federal	Ford	G. M. C.	International	Mack	Paige	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	Months
January	158	247	8759	251	1608	50	*	186	169	13244	731	1837	344	*	25	698	28	83	146	95	100	241	413	130	62	669	30274	January
February	135	235	10327	207	1267	58	*	152	162	14198	855	1927	298	*	26	565	31	67	74	155	86	220	318	160	44	593	31846	February
March	195	384	13011	264	1595	65	*	156	228	19546	936	2364	452	52	46	682	43	59	106	265	99	223	408	246	88	675	42188	March
April	216	492	14054	300	1682	84	*	153	252	21733	1242	2739	566	73	61	903	35	46	147	314	95	198	480	298	67	767	46997	April
May	212	542	12790	373	1504	59	*	152	213	19742	1191	2531	717	55	93	738	45	55	147	306	112	168	452	216	71	720	43204	May
June	182	479	9762	261	1112	56	*	118	158	15661	889	1915	446	19	44	582	42	52	109	207	101	105	412	200	47	556	33515	June
July	194	386	10949	337	1078	50	*	124	208	19832	881	2471	577	35	41	584	35	70	100	266	88	114	459	215	80	703	39877	July
August	171	251	9548	276	705	35	*	91	142	17078	604	2217	405	29	27	436	40	72	102	184	83	84	398	170	41	620	33809	August
Sept.	170	191	9714	217	1014	42	*	60	155	17524	593	1827	360	29	25	402	45	75	92	172	100	83	317	138	28	529	33902	Sept.
October	186	264	8477	144	1738	37	*	60	174	18151	676	1797	391	29	30	355	45	55	91	177	195	99	321	120	33	579	34224	October
November	119	204	5457	137	1243	24	9	24	145	11470	378	1145	211	25	29	256	24	37	52	100	248	56	225	65	20	295	21998	November
Totals	1938	3675	112848	2767	14546	560	9	1276	2006	188179	8656	22770	4767	346	447	6201	413	671	1166	2241	1307	1591	4203	1958	581	6712	391834	Totals

*Included in the miscellaneous column.

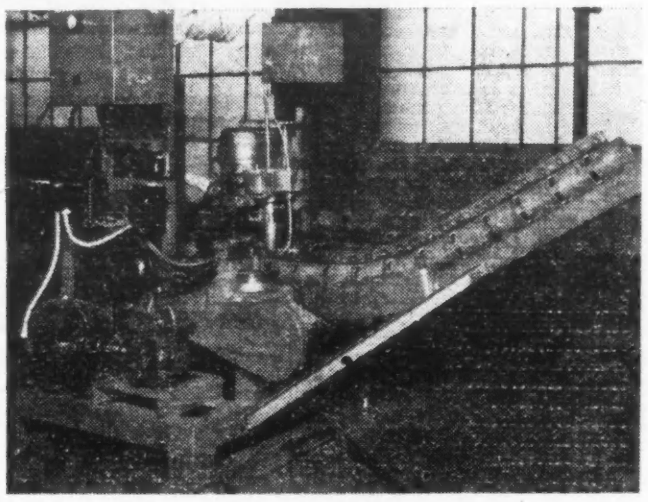
New Commercial Car Registrations for First Eleven Months of 1929 by Months

Months	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	Fargo	Federal	Ford	G. M. C.	International	Mack	Paige	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	Months
January	128	242	6250	301	2424	*	179	203	13441	1197	2186	377	*	51	932	35	102	100	112	121	221	409	*	27	819	29857	January
February	129	246	10290	277	2004	*	160	189	13312	1022	1937	388	*	34	830	34	68	87	134	83	277	339	*	35	686	32561	February
March	230	411	16057	372	2632	*	244	262	17793	1327	2527	648	*	42	1244	26	71	113	172	199	404	510	*	45	1020	46349	March
April	360	525	18174	347	3056	*	239	286	22758	1574	3425	852	*	79	1520	34	101	157	244	147	414	622	*	57	1294	56265	April
May	335	463	15961	350	2843	*	272	326	22352	1454	3230	743	*	70	1543	37	122	165	242	149	352	621	*	84	1137	52851	May
June	229	377	13232	308	2414	*	287	226	19510	1314	2698	693	*	64	1222	37	93	157	173	153	421	505	*	52	896	45061	June
July	306	571	18051	315	2815	*	477	277	24482	1469	3730	692	*	55	1326	34	128	177	254	171	907	564	*	59	1085	57945	July
August	263	438	16649	362	2261	71	391	235	22384	1266	3182	643	*	88	1202	53	132	181	250	143	787	563	*	52	920	52523	August
September	289	348	15336	268	2382	71	382	239	19463	1003	2733	481	*	46	1030	44	115	96	146	143	734	487	*	35	703	46574	Septemb'r
October	287	394	15820	295	2642	100	353	280	20970	1199	2796	623	*	61	1138	43	114	155	206	123	707	627	*	54	897	49884	October
November	241	303	9570	235	1716	58	219	208	15637	769	1628	399	*	39	688	26	71	100	131	98	416	443	*	46	585	33626	November
Totals	2797	4318	155390	3430	27189	300	3203	2731	212102	13594	30072	6539	*	629	12675	403	1117	1488	2064	1530	5640	5690	*	553	10042	503496	Totals

***Not in production at that time.**

Production--Engineering--Factory

Lincoln Announces New Automatic Electric Welder



New Lincoln Welder

The Lincoln Electric Company, Cleveland, O., announce a new automatic welder for the welding of automobile starter frames, in which are embodied the principles of the shielded arc and which utilizes the electronic tornado process.

The starter and generator frames are usually of 5-16 or ⅜-inch plate, which is cut to size and shape, punched, and rolled into cylinders before being arc welded. After this the cylinders are fed into a gravity conveyor, being guided automatically so as to keep the seams on top. At the bottom of the gravity conveyor they pass between two rolls, which squeeze the seams together tightly as they pass under the arc. No filler rod is used, the two edges of the seam being fused together.

The machine has a capacity of approximately 240 frames per hour, and one man and a helper can operate four machines simultaneously.

GOODYEAR TO OPEN PLANT NEAR BUENOS AIRES IN FEB.

Akron, Dec. 31.—The Goodyear Tire and Rubber Company's plant at Hurlingham, near Buenos Aires, will be formally opened in February. C. Slusser, vice-president and factory manager of the parent company, and A. G. Cameron, vice-president of the Goodyear Tire and Rubber Exporting Company, will leave here about January 1 to participate in the inaugural ceremonies.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

HANNUM ANNOUNCES NEW STEERING GEAR

NEW HANNUM steering gear

Hannum Manufacturing Company, Milwaukee, Wis., has announced a new nut and lever type steering gear. It is of the quarter nut design in which from four to five threads of the nut are in contact with worm threads at all times. The worm is fitted to the worm tube by serrations and is supported in tapered roller bearings. The trunnion is a closed-end member, with a slot into which the trunnion block engages, the latter in turn, fitting over the sliding-nut pin. The mechanical advantage increases as the wheel is turned from the mid-position, until in the extreme position, where resistance to steering is greatest, the greatest power is available, it is claimed. It is also claimed that combined with this mechanical advantage at the extreme positions this gear provides most rapid steering action at the center.

The pressure side of the worm thread is ground. The bearing surfaces are lubricated automatically by the action of the sliding nut and trunnion. By providing a groove in the housing casting, oil is permitted to flow between the inner and outer trunnion bushings. This assures that the outer trunnion bushing will be lubricated as long as the housing remains half filled.

A side adjustment is provided to take up wear between the threads at the trunnion cheek. Up and down play and play in roller bearings is corrected by means of an adjusting screw at the top of the housing.

Final Revision, Complete, New Commercial Car Registration Statistics, Nov., 1930

Returns for today: Alabama, Arizona, California, Colorado, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts Mississippi, Missouri, New Jersey, New Mexico, New York, Tennessee, Texas, Vermont and Wyoming.

Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. **Complete figures for November, 1929, appear on Page 7.** **Commercial Car Registrations do not include buses.**

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	F. W. D.	Fargo	Federal	Ford	G. M. C.	International	Mack	Paige	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Alabama		8	376		25				23	332	18	98	15			7				1	2	5	10	3	4	1	928	Alabama
Arizona			16		5					55	2									1	3					1	83	Arizona
Arkansas			24		3					40	1	6											1				75	Arkansas
Calif.	12	5	397	3	98		8		6	1187	49	35	7	2		54	2	6	16	2	22	3	15	2	4	63	1998	Calif.
Colorado			68		15			1		158	4	7				3		1			1	1	1				260	Colorado
Conn.	2	5	67	12	35	3		1	6	180	7	21	17	1	2	10			1	4	9		3	3		7	396	Conn.
Delaware	1		10	3		1				34	2	3	2			1					2	1					60	Delaware
Florida		1	88		7				5	304	5	11		1		1		1					2	1			427	Florida
Georgia	1		57		3					135	1	5	1			2							4				209	Georgia
Idaho			43		5					100	1	14		1		2							1	1	1	1	170	Idaho
Illinois	4		240	34	61				13	385	5	44	7		2	4		3	2				2	4		23	833	Illinois
Indiana	1	5	66	1	13			1		131	4	15			1						5	2	1	1		6	253	Indiana
Iowa			129	1	22	1		2	1	160	7	51				7	2	2			9			6		8	408	Iowa
Kansas			106		8					130	2	14	1			1	2				5			1	2	1	273	Kansas
Kentucky		7	102	1	23			1	1	157	7	25				3				1	4		1			1	334	Kentucky
Louisiana		51	69	1	15					162	4	31				4		1			1		3				342	Louisiana
Maine			27	2	16	1				72	2	9				5					5			2			141	Maine
Maryland	3	5	69	1	18	1		1	2	182	5	20	7		1	4					2		12			6	339	Maryland
Mass.	12	8	105	4	66	3			12	480	23	31	19			12	1		3		16	1	8	2		8	814	Mass.
Michigan	5	4	190		26			2	12	523	13	22		1	2	8	5				6	1	1	1		18	840	Michigan
Minn.		1	127	6	27		1		2	261	10	47				5		1			11	4	1	3		8	515	Minnesota
Missis'ppi			78		2					82	2	9				1						1				1	176	Miss.
Missouri		8	228	8	33	1			3	367	13	30	11	1		4			3	2	5	1	3			8	729	Missouri
Montana			13		5			1	1	43		10		1		1		1				1	1	3		1	82	Montana
Nebraska			104	1	11				2	201	2	24		2		5					10	1		2		2	367	Nebraska
Nevada			9		4					23	2	1							1							1	41	Nevada
N. Hamp.		1	22		3					81		1	1			1				1	2				1		114	New Hamp.
N. Jersey	9	9	150	5	76			2	4	368	17	49	9	3	1	17		4	5	1	14	1	23	1		21	789	N. Jersey
N. Mexico			34	1	1					68		5									2		1	1			113	New Mex.
New York	23	48	385	18	136	3		4	14	1117	39	74	42	2	3	25	1	4	5	57	27	6	26	2	4	31	2096	New York
Nor. Car.			121		21	2				172	5	4	1			1							2	1		4	334	N. Carolina
Nor. Dak.			13		3			1		20		13				1					1						52	Nor. Dak.
Ohio	8	5	257	6	46	3			1	545	22	60	4		7	7		3	3	5	20	8	23	1	1	25	1060	Ohio
Oklahoma		3	94	1	27			1	8	194	10	19	1	1		2					2	6	1	3	1	1	375	Oklahoma
Oregon			41		3			1		133	1	4		1		2		1			4		1			2	194	Oregon
Penna.	24	26	388	10	219	5		1	11	1036	35	109	52	5	7	21	4	4	11	25	35	7	50	6	2	27	2120	Penna.
Rh. Island	2		21	2	8			1	4	76	4	3	1			5					2					2	131	Rh. Island
So. Car.			107		6			1		84	5	6				1							1			2	213	S. Carolina
S. Dakota			18	3	4					32	1	20															78	S. Dakota
Tennessee		2	74		6				5	100	4	15	3	1		1					3	1	3				218	Tennessee
Texas		1	445		43			1	3	579	13	85	4			10		1			4	1	7	5		4	1206	Texas
Utah			32		13					87	2	11				3		1			1						150	Utah
Vermont			11	1	6					50		3															71	Vermont
Virginia	5	1	151	1	22				1	209	12	17	2			4	5	1			2		6	1		2	442	Virginia
Wash'ton			26		3					83	1	7				1					2		2	1		1	127	Wash'ton
West Va.			60	2	22					125	3	15	1	1	2	3	2				2	1	2	6			247	West Va.
Wisconsin			164	4	23			1	5	310	8	35	1	1		5		2	2		7	3	1	2		5	579	Wisconsin
Wyoming			7		2					20		2											2				33	Wyoming
D. of Col.	7		28	5	4					97	5	5	2		1	2							4			3	163	D. of Col.
Totals	119	204	5457	137	1243	24	9	24	145	11470	378	1145	211	25	29	256	24	37	52	100	248	56	225	65	20	295	21998	Totals

Equipment - - - Development

Ex-Cell-O Announces New Drilling, Tapping and Reaming Machine

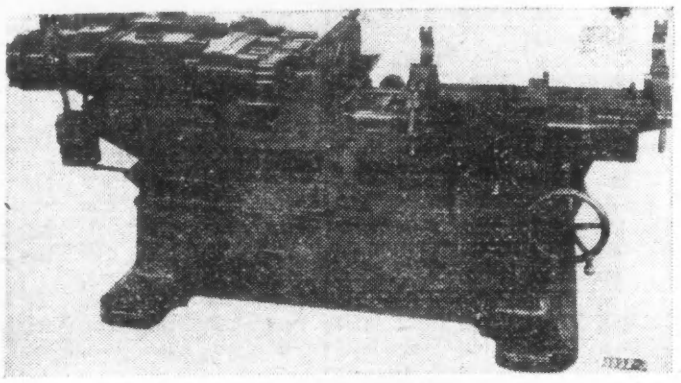


FIG. 1. New Ex-Cell-O semi-automatic, drilling, tapping and reaming machine

Ex-Cell-O Aircraft and Tool Corporation, Detroit, Mich., announces a new semi-automatic machine for drilling, reaming and tapping eight holes in a rear axle housing. It consists of four groups of spindles. It incorporates two semi-automatic units, one of which performs the drilling operations while the other taps all of the holes. The first unit consists of a twenty spindle multiple head and is mounted on the drilling unit. This head is provided with two horizontal rack guide bars with equalizing pinions and shaft which, in turn, eliminates the possibility of misalignment of the unit. One guide bar is shown directly below the multiple head in the illustration. This head consists of three banks of spindles; the first bank of eight spindles drills eight 27-64 inch holes while the second group of four drills four 29-64 inch holes. The third group of eight spindles is used for step reaming, eight ½-inch diameter ⅛-inch deep and 7-16-inch diameter holes entirely through the part. The eight spindle tapping head is mounted on the tapping unit for tapping eight ½-inch holes in one operation.

The fixture proper for holding the part consists of a compound table which is indexed by moving to the right and, at the same time, moving to the loading position. The part is located in two V' and clamped by an adjustable cam. A central equalizing interrupter is provided, so that the part can be tilted to the proper angle when drilling either end. After locating the part, the table is then moved to the left to the drilling position, and held in this position by a jog lock connected directly to the operating handle. The drilling unit is then started by pressing the starting button, centrally located in the front of the machine, and the machine completes its drilling cycle and stops. A separate control is provided for each unit (drilling and tapping).

After the drilling operation, the cross slide is indexed to the second position. This cross indexing is accomplished by releasing the indexed plunger in the center of the cross slide and turning the hand wheel at the extreme right of the machine

(Continued on page 12)

Improving the Rear View of The Motor Car

COMMENTING on the improvements in appearance which have evolved from time to time, according to our British contemporary "The Autocar," attention is now being given to improving the rear appearance of the car.

"As in other walks of life, appearance in the case of a car counts for a great deal," says this magazine. "Hand in hand with progress in mechanical development, the most notable feature of cars of recent years is their improved appearance. Curiously, the study of appearance in the case of a car was not tackled simultaneously from all directions.

"In the first place, the broadside view was the one to receive serious attention; the higher hood and dash imparted an impressive appearance; then higher waistlines, deep doors obscuring the valances, gracefully swept fenders and cleaner running-boards all came in for their measure of attention, to the ultimate benefit of the car's appearance. Compare a modern car with one of, say, five years ago, and the immense change for the better will be appreciated.

"But the front aspect was comparatively neglected until aprons came into vogue two or three years ago to hide straggly parts. Even such a comparatively minor fitting as an apron can effect a remarkable change in the front view of a car—you have only to remove the tray to prove the point. Even the size or number of louvers introduced make all the difference. The high mounting of head lamps of goodly size likewise effected a great change.

"The front aspect settled to the satisfaction of designers and the public, the tail view is the problem to be tackled last of all, and this is the newest move on the part of those who study esthetic matters.

"Until recent years, gaps and crannies, with projecting spring ends and shackles, have given a very broken line to the tail view, a higgledy-piggledy jumble not altogether avoidable, as shackles needed to be lubricated frequently, and occasional punctures necessitated ready access for the jack from the rear end. Today, punctures are unusual with a well-shod car, and automatic lubrication of the shackles, or a shackle which requires no lubricant, has virtually canceled the need for constant attention to these parts.

"Thus the way has been cleared for artistic treatment of the tail view of a car—a view, incidentally, by which many cars are judged by

(Continued on Page 12)

Final Revision, Complete, New Commercial Car Registration Statistics, Nov., 1929

This table is repeated for comparative purposes only. November, 1930, statistics appear on Page 6.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	F. W. D.	Fargo	Federal	Ford	G. M. C.	International	Mack	Paige	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Ala., '29		10	1465		91			8	36	1064	64	264	7			19	3	1		3	8	48	19		1	10	3121	Ala., 1929
Ariz., '29			68		16	1		3		118	2	9				3		2					6		1	1	230	Ariz., '29
Ark., 1929			252	1	7			1		302	1	23	1		1	7						8	2			2	608	Ark., '29
Cal., '29	15		395	4	161	2		10	19	1274	67	26	36			83	5	13	25	2	15	4	33		3	97	2289	Cal., 1929
Col., '29			93	1	21			4	1	153	10	10				9		3				4	6		1		316	Col., 1929
Conn., '29	11	8	140	12	43	6		5	7	199	25	23	32			36	1			8	5	7	10		1	17	596	Conn., '29
Del., 1929		3	19		4			1		38	2	2															69	Del., 1929
Fla., 1929		2	163		11	3				247	1	9	1			5						3	2				447	Fla., 1929
Ga., 1929		2	115		9			1	2	179	12	17				7				1	1	4	7				357	Ga., 1929
Idaho, '29	1		51		12				1	78	2	11				3	2	1	1			3	2			2	170	Idaho, '29
Ill., 1929	3	2	173	20	59	1		10	5	620	31	68	6			30				3		16	12			95	1154	Ill., 1929
Ind., 1929		9	111	1	30	4		1	1	206	9	29	1		4	9		1		5	2	6	2			1	432	Ind., 1929
Iowa, '29			202		18	3		5		200	8	46				7		2				9			1	1	502	Iowa, 1929
Kan., '29		1	62	1	9			2		121	1	13				6	1			1	1	3	2			1	225	Kan., 1929
Ky., 1929			168	23	22			1		206	14	38	3		1	11		1		2		8	4		1	11	514	Ky., 1929
La., 1929		1	189		17				1	301	1	29				6					3	5	7			3	563	La., 1929
Me., 1929			41	1	14	1				86	3	10				10		2	5		2	5				1	181	Maine, '29
Md., 1929	4	8	92	9	30	2		2	2	159	17	17	14			11	1			1	1	2	20		2	6	400	Md., 1929
Mass., '29	22	16	192	10	99	4		17	3	466	42	59	34		1	46		2	9	2	6	4	21			22	1077	Mass., '29
Mich., '29			135	2	32	1		3	4	505	14	40				18	1	1				3	3			7	769	Mich., '29
Minn., '29			197	3	28	2		6	1	369	9	74				16					2	18	5		2	7	739	Minn., '29
Miss., '29		1	190		5			2	1	233	3	32				2						8					477	Miss., 1929
Mo., 1929	3	12	251	17	63	1		8	2	529	36	49	16			10	2	4	3		4	16	12			12	1050	Mo., 1929
Mont., '29	3		34		10			4	1	49	1	12										2	2			1	119	Mont., '29
Neb., 1929			116	2	7			1		211	4	23	1			7			1			9	1			1	384	Neb., 1929
Nev., '29			8		4					20	1	1														1	35	Nev., 1929
N. H., '29		1	37	1	6				2	86	5	8	1			5		1		1		1				2	157	N. H., 1929
N. J., 1929	22	11	254	14	75			8	36	436	32	27	36		3	24		7	7	4	4	8	28		10	41	1087	N. J., '29
N. M., '29			86		5			1		80	4					1		1				2					180	N. M., '29
N. Y., '29	41	111	462	69	181	4		39	15	1189	105	92	85		8	79		3	12	36	11	23	71		2	54	2692	N. Y., 1929
N. C., 1929	2		163		28	1		1		229	11	7	1			2	1			1		9	2			7	465	N. C., 1929
N. D., '29			44		6			1		61	1	19				1		1				5					139	N. D., 1929
Ohio, '29	8	31	365	8	76	2		7	15	761	39	74	4		1	38	2	2	1	4	2	34	44		11	45	1574	Ohio, 1929
Okla., '29			283	1	54	1		8	5	386	8	39	8			17					1	13	5			1	830	Okla., '29
Ore., 1929	3		90		13			4	4	171	10	7	4			3		3	2			1	5			13	333	Ore., 1929
Penn., '29	76	60	651	23	245	11		29	19	1452	74	151	84		15	86	4	7	28	45	16	44	68		7	82	3277	Pa., 1929
R. I., 1929	12	2	40	1	18			2	8	97	9	12	7			13			4	6			4			7	242	R. I., 1929
S. C., 1929			137		7			4	1	130	7	7				1					1	1	1			2	299	S. C., 1929
S. D., 1929			70		6			1		50		32				3						9					171	S. D., 1929
Tenn., '29		4	135		11				7	152	13	45	6			1	1	1				5	3		1	3	388	Tenn., '29
Texas, '29			779	1	49			6	3	885	27	85	2		2	24		7			6	21	11		1		1909	Texas, '29
Utah, 1929			32		4			1		117	6	5				4		1					2			1	173	Utah, '29
Vt., 1929			19		8			2	3	42	2	11	1			1				1	1	1	1			1	94	Vt., 1929
Va., 1929	1	3	658		32			3	1	671	7	17			1	5	1	1			1	21	5			3	1431	Va., 1929
Wash., '29			57		8	2		2		153	5	7	4			4		2			1	1	4			4	254	Wash., '29
W. V., '29		5	80	2	29	1		2		135	9	12	1		1	4	1			1		3			1	2	289	W. V., '29
Wis., 1929			157	6	19	4		2	2	276	6	27	2			7			1	4	4	16	6			10	549	Wis., 1929
Wyo., '29			30		9					50		6				1						3					99	Wyo., 1929
D. C., '29	14		19	2	5	1		1		95	9	4	1		1	3		1	1				5			8	170	D. C., '29
Totals	241	303	9570	235	1716	58	*	219	208	15637	769	1628	399	*	39	688	26	71	100	131	98	416	443	*	46	585	33626	Totals

*Not in production at that time. †Carried in miscellaneous column.

NEW PASSENGER CAR REGISTRATIONS FOR FIRST

Name of Car	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska
Auburn	19	9	17	839	72	280	37	82	45	12	814	364	182	37	86	46	29	80	495	155	94	3	229	33	51
*Austin	25	16	15	535	47	67	12	113	35	18	142	94	88	91	50	39	22	22	153	186	62	16	107	4	44
Buick	978	499	454	8962	1349	2659	469	1185	987	371	7696	2366	1806	1613	680	663	910	1626	5486	5577	1799	640	2769	363	1245
Cadillac	39	12	47	1359	50	380	67	101	70	5	817	178	87	48	50	49	90	99	664	798	92	16	210	17	30
Chevrolet	7626	2020	5911	32471	6860	7154	1568	7715	7898	2952	34254	15682	22921	13037	9288	7186	3508	10063	16802	25690	17369	6944	23991	3199	12206
Chrysler	503	114	447	4405	485	1314	207	639	346	175	3933	1278	1087	575	757	496	490	774	2568	1748	1435	421	1218	253	685
Cord	2	3	4	255	11	25	4	35	12	2	278	88	19	8	12	5	4	9	71	59	16		37	12	13
De Soto	247	172	196	3714	251	1056	48	222	203	165	2763	1294	342	408	384	388	257	231	924	1259	437	196	726	189	206
Dodge	519	239	593	4767	733	1468	42	415	520	311	4161	1757	1762	1080	891	784	518	561	3191	2207	1020	329	1814	315	976
Durant	21	111	104	3308	488	199	124	75	108	217	868	356	752	215	228	37	183	225	559	759	508	45	701	149	241
Essex	337	103	185	3092	538	1612	153	613	201	160	3617	2074	1300	922	870	295	1102	867	4853	3892	1128	116	1890	274	468
Ford	11039	3352	9308	75030	9966	12638	2968	13521	13642	4147	62471	27681	29006	17802	14637	11292	5788	13312	40460	66783	27529	9678	33567	4238	17054
Franklin	7	11	10	621	32	243	18	80	71	11	654	77	38	21	58	64	53	96	487	130	20	3	143	46	19
Gardner				96	15	6					183	11	1	4	4	20	3		49	2	21		108		11
Graham	236	114	145	2614	395	722	15	492	223	128	1881	703	563	266	219	211	153	459	1092	1363	783	96	1013	88	268
Hudson	167	71	63	2025	291	726	76	372	189	84	1788	947	629	564	264	179	348	349	1818	1972	561	65	609	161	158
Hupmobile	181	102	59	1660	206	647	56	169	204	33	1973	486	412	211	262	187	141	348	1288	870	549	100	685	108	224
Jordan			1	17	4	50	2	12			52	27	1		8		3	14	52	55			14		
La Salle	79	21	66	1065	86	401	61	106	86	4	1049	145	85	44	51	48	85	129	801	556	169	20	266	25	30
Lincoln	25	9	18	428	18	72	12	46	36	5	495	78	62	30	37	24	21	37	209	177	54	16	95	6	38
Marmon	76	51	22	670	177	252	11	147	71	13	833	722	227	116	165	99	80	89	587	478	167	33	339	99	85
Nash	169	217	210	3668	614	1059	85	292	192	165	3505	937	936	660	280	688	534	593	3012	1089	874	384	1309	273	376
Oakland	50	72	60	1514	185	590	75	195	89	69	1409	537	378	322	159	140	208	304	808	1103	526	31	632	113	152
Oldsmobile	166	168	93	2235	318	730	79	224	324	108	3698	1736	1325	507	261	220	398	532	1809	3168	1003	78	1766	132	670
Packard	119	64	26	2423	153	845	133	222	131	20	2353	400	265	115	157	126	187	343	1905	1203	546	31	553	18	121
Peerless	1	18		216	12	61	1	3			377	63	24	52	21	22	37	54	286	72	25		84	3	12
Pierce-Arrow	10	7	19	546	51	211	13	42	33		382	69	31	30	31	24	31	85	576	108	93	8	216	12	9
Plymouth	685	157	580	2204	629	783	146	526	405	262	3886	1969	2154	1063	1160	441	754	712	2028	3073	2570	178	1968	358	1379
Pontiac	249	149	257	3356	604	1415	249	541	309	210	4725	2298	2045	1388	643	621	727	1101	3027	3215	2131	218	2253	305	890
Reo	48	6	20	916	67	409	5	121	44	31	618	171	144	123	150	34	85	131	722	825	192	31	219	58	52
Studebaker	352	397	140	6228	447	1239	84	186	454	168	4301	1741	1025	563	499	338	520	738	2583	1775	1244	200	1025	234	737
Stutz		5	1	52	18	24		1	2	2	150	27	11	24	11	6	3	4	42	4	5		38		3
Viking	7	12	6	176	19	34	7	17	37	9	248	94	37	22	11	13	5	13	117	238	51		62	9	36
Whippet	195	54	77	677	276	150	31	139	81	102	937	642	859	417	400	70	119	241	397	592	807	92	1281	164	557
Willys	149	118	48	1141	425	371	65	175	153	84	1884	947	1364	707	517	134	320	349	971	1048	1228	51	1303	198	635
Willys-Knight	45	53	33	1236	168	238	14	63	39	19	865	176	201	186	134	84	123	138	810	256	296	28	355	72	181
Miscellaneous	5		2	384	5	34	5	3	10	1	340	37	31	7	11	6	8	68	50	46	27		240	6	17
Totals	24376	8526	19237	174905	26065	40164	6942	28890	27250	10063	160400	68252	72200	43278	33446	25079	17847	34796	101752	132531	65431	20067	83835	11534	39879

*Six months' report.

NEW PASSENGER CAR REGISTRATIONS FOR FIRST

Name of Car	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska
Auburn	45	140	12	1046	120	536	86	99	43	26	1790	842	313	157	150	95	20	119	654	449	306	1	366	106	72
Buick	1809	696	921	13586	1839	3213	489	1551	1786	580	10996	3721	2710	2630	1105	1136	1208	2178	7152	11710	2383	863	3914	798	2259
Cadillac	96	44	57	1543	55	515	66	139	59	5	1474	214	76	75	85	47	80	119	888	843	99	21	269	27	53
Chevrolet	13907	3821	3474	37857	6829	8248	1676	8753	10083	3541	39028	24017	25955	16012	12744	10547	4077	10618	19933	46222	16786	10610	25939	4692	14930
Chrysler	919	288	670	6999	650	1786	92	825	537	204	5659	1943	1083	816	888	711	600	1060	3578	3604	1379	624	1455	455	847
*Cord		4		79	4	10	3	7	7	1	71	31	10		8			6	25	28	17		12	3	3
De Soto	293	424	471	5570	583	1529	11	356	450	281	3979	2122	736	866	697	587	247	441	1685	3736	722	381	1040	303	556
Dodge	1212	590	1256	8135	1325	2227	79	798	908	560	7417	3276	2842	2005	1673	1291	671	1045	4781	4891	1778	767	3064	876	1800
Durant	197	484	325	6804	854	405	220	67	80	707	2072	749	1758	891	599	70	251	454	897	2161	1280	113	1644	485	892
Essex	1169	547	613	10794	1875	3503	412	1286	665	476	11673	7419	3988	2900	2745	850	2111	2443	10508	19677	3326	382	4898	926	1289
Ford	23522	5243	16699	79467	14248	12267	3055	14849	18723	5895	68781	38395	38007	26666	19081	18504	6615	14479	36494	88349	35017	17732	38433	6559	25093
Franklin	37	33	20	874	43	377	29	116	137	15	531	96	36	54	49	38	123	140	851	106	55	3	221	100	24
Gardner	1		6	346	16	42		4	1	4	184	40	2	9	27	29	16	7	111	125	45		207		22
Graham	439	375	267	5297	530	1350	45	627	601	204	4812	1672	1092	643	558	398	203	583	2486	4276	1318	40	1376	391	742
Hudson	464	234	159	5355	613	1119	114	569	310	175	4633	1933	1093	1234	517	331	525	706	3125	5472	1001	174	1106	323	353
Hupmobile	306	210	137	2937	271	1082	73	385	370	78	3322	769	693	389	421	324	134	581	2155	2899	783	204	1082	157	302
Jordan	1	2		151	8	40		34	4		112	66	15		16	14	4	21	109	54	13	3	24		3
La Salle	160	41	111	1835	126	636	107	195	150	8	1969	270	146	114	178	93	163	207	1511	1263	216	33	436	30	63
Lincoln	37	7	30	632	26	122	11	51	29	7	702	103	65	35	47	36	26	69	264	312	85	17	148	7	49
Marmon	76	164	92	1392	336	548	11	58	82	26	1437	1295	416	199	181	113	218	224	1030	1460	256	12	542	179	160
Nash	510	571	587	7712	1186	2120	324	647	486	355	8839	2201	1942	1779	630	1283	878	1157	5354	2937	1727	610	2267	769	1007
Oakland	190	185	128	2469	251	693	120	263	149	94	2820	896	512	394	207	226	185	297	1116	1734	740	52	766	163	334
Oldsmobile	290	457	179	5257	622	1218	142	421	394	200	6417	3986	2066	1254	741	519	548	836	2626	7527	1798	153	2864	383	1215
Packard	255	131	64	3607	188	1413	140	302	186	29	3765	709	346	175	319	172	288	454	3252	2332	628	40	760	54	141
Peerless	12			427	30	143	20	11	1		583	158	96	75	53	51	101	109	498	206	63		248	7	65
Pierce-Arrow	7	20	17	655	74	248	21	45	42	3	404	106	17	51	48	48	24	106	543	192	94	1	318	17	25
Plymouth	1160	336	995	3236	1013	1120	158	586	642	421	5423	2539	2536	1688	1256	826	742	962	2271	4924	2906	504	2078	867	1789
Pontiac	903	606	888	7678	1431	2948	480	971	784	461	12185	6122	4099	3370	1463	1701	1072	1897	6100	11509	4534	544	4436	883	2654
Reo	82	17	59	1570	108	572	11	138	111	46	1189	276	163	287	212	69	248	167	1170	1236	274	55	331	106	95
Studebaker	564	714	253	9068	634	1714	149	365	445	300	6252	3160	1241	1125	731	502	556	725	3388	3465	1661	129	1664	487	1006
Stutz	12	11	2	226	41	41		16	15	1	334	138	28	26	20	16	23	53	110	48	51	2	85		2
Viking	12	22	10	359	23	75	8	20	19	12	399	145	71	27	34	22	19	28	101	347	46	5	52	18	27
Whippet	2309	615	1059	4546	1887	1731	277	1077	1325	608	8633	5874	6441	4116	2905	783	959	1524	3820	8874	5062	861	7247	1202	4093
Willys-Knight	139	169	121	4254	391	601	53	143	118	105	1815	729	569	379	278	158	234	333	1905	1381	873	106	859	226	438
Miscellaneous	50	20	37	2630	56	225	14	60	28	11	2447	544	213	172	122	25	65	130	976	691	259	2	634	92	98
Totals	51185	17221	34719	244393	38296	54418	8496	35834	39770	15439	232147	116556	101376	70640	50788	41615	23234	44278	131467	245040	87581	35048	110785	21691	62504

*Three months' report.

ELEVEN MONTHS OF 1930 BY MAKES AND STATES

Name of Car	Nevada	N. Hampshire	New Jersey	New Mexico	New York	No. Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	So. Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Dist. of Col.	TOTALS
Auburn	34	64	837	14	2838	21	5	708	67	43	893	99	1	16	50	118	73	37	62	165	66	180	5	97	10,605
*Austin	11	14	209	1	401	44	12	188	68	82	387	21	38	15	88	192	15	11	56	65	21	59	4	38	4,043
Buick	219	580	6679	481	18748	1099	266	5134	2389	1001	10184	922	534	380	1208	5213	382	486	1298	1991	662	3189	230	980	117,407
Cadillac	5	45	803	8	2444	65	1	621	125	36	866	86	9	4	77	248	28	22	59	72	40	189	5	101	11,334
Chevrolet	614	2290	17587	2081	44761	8495	3895	31525	16993	4963	36698	2931	5731	5350	10450	35641	2408	1630	12625	6807	7180	17435	1192	3695	587,292
Chrysler	155	295	3144	123	8373	800	214	3053	740	402	6826	587	298	344	588	1895	174	303	848	985	607	1402	132	334	58975
Cord	3	3	69	1	341	3	3	101	20	5	109	14	1	4	15	27	13	10	14	20	11	34	2	10	1,817
De Soto	88	191	1225	98	3747	253	104	2439	400	322	3350	497	202	94	295	1797	168	90	455	750	333	763	40	184	34,163
Dodge	166	204	2349	168	5650	822	214	3191	1732	519	5520	512	271	511	903	2710	292	250	1012	763	953	1663	194	302	61,844
Durant	62	102	734	52	1562	71	157	1132	245	651	1759	91	26	289	121	701	280	55	228	931	175	627	27	125	20,784
Essex	109	353	2796	73	7612	587	183	4272	409	491	5306	427	230	281	556	874	301	398	831	871	749	1747	107	436	60661
Ford	1127	3980	34772	2875	90531	15669	5248	60226	21659	8842	69392	5195	8568	7192	16589	49606	4161	2943	18762	14553	10560	25592	1828	8675	1,025,454
Franklin	7	43	401	2	1483	43	6	584	88	82	721	61	13	11	48	174	32	19	55	104	57	120	8	44	7,219
Gardner	5	1	26		108		2	80	1	21	89	6			3	22		1		3	1	27			930
Graham	38	114	1195	42	3553	222	103	1762	303	388	3039	179	58	105	357	849	191	153	339	372	447	871	31	280	29,233
Hudson	92	135	1577	42	3879	324	69	1880	243	250	2687	196	150	132	217	434	124	159	304	388	268	891	46	173	29,136
Hupmobile	26	101	1339	3	3337	64	17	1493	218	178	2524	152	95	155	321	524	66	104	374	514	164	431	53	228	23,642
Jordan	1	5	88		293			100	2	3	102	2				23		1	3	15	4	19		10	983
La Salle	19	28	727	21	1831	60	7	494	123	48	989	107	25	9	107	252	19	49	87	67	59	163	6	83	10,858
Lincoln	5	11	174	4	952	35	3	228	49	29	283	34	9	6	40	114	8	6	35	27	16	47	3	44	4,210
Marmon	18	68	573	18	1797	63	86	875	90	97	1116	29	50	44	75	373	32	28	142	99	185	224	10	71	11,772
Nash	64	370	3216	73	8249	248	237	2530	492	310	4434	317	122	229	309	1021	217	258	391	473	465	2235	91	276	48,748
Oakland	11	86	1150	34	2802	119	94	1533	322	176	2073	129	73	109	134	554	68	108	313	258	295	806	22	213	21,203
Oldsmobile	66	240	2584	69	6682	249	183	3636	471	338	4380	268	123	647	367	866	141	1 63	339	728	420	1537	85	470	46,800
Packard	29	89	1986	23	5232	119	17	1571	303	128	2843	208	78	51	213	493	76	99	223	220	166	407	14	338	27,385
Peerless		14	303		509	4		589	8	1	433	67		1	4	48		17	52	31	10	77		163	3,775
Pierce-Arrow	2	25	574	3	1381	13		289	111	27	682	102	2	6	90	212	8	17	53	25	27	136	1	62	6,485
Plymouth	106	294	1619	124	5715	672	411	4593	928	464	6904	384	336	650	695	2358	110	409	900	1097	863	2174	134	352	62,362
Pontiac	49	289	2361	109	6813	625	382	4924	1387	537	5146	561	289	375	585	2414	218	242	1319	775	806	2668	70	572	66,442
Reo	3	126	483	7	1385	24	17	624	133	132	884	247	36	49	65	535	35	49	100	168	139	214	8	58	10743
Studebaker	99	236	2919	73	7748	183	219	2901	466	507	4316	313	138	341	695	1628	184	130	431	902	395	1682	72	387	54,183
Stutz		1	38	1	159		1	53	6	1	29	1			7	8	10		6	1	7	12	1	3	778
Viking	8	7	164	5	463	12	14	165	38	19	191	5	3	30	36	65	19	8	15	43	20	85	4	23	2,722
Whippet	19	57	385	49	1537	200	253	1523	563	83	1153	55	58	290	347	698	37	153	295	301	375	633	32	51	18504
Willys	29	168	1024	54	3706	183	274	2870	521	138	3113	222	35	312	336	954	40	150	453	466	561	1283	42	72	31,391
Willys-Knight	19	62	921	29	2408	37	55	1110	104	131	1188	167	6	48	85	324	15	56	137	307	146	230	18	86	13,502
Miscellaneous	1		89		441	2	5	102	27	12	287	7	1	2	27	72		5	25	3	4	94	1	79	2,629
Totals	3309	10691	97120	6760	259471	31430	12757	149099	51844	21457	190896	15201	17609	18084	36103	114037	9945	8619	42641	35360	27257	69946	4518	19115	2,530,014

ELEVEN MONTHS OF 1929 BY MAKES AND STATES

Name of Car	Nevada	N. Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	So. Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Dist. of Col.	TOTALS
Auburn	28	59	1255	28	3666	23	19	1289	199	90	1642	175		59	92	245	38	18	95	277	88	258	20	131	17,387
Buick	355	666	7150	576	20688	1987	532	8859	3909	1274	12699	1206	785	797	1715	7770	545	662	1768	2458	1160	4585	508	1255	165,142
Cadillac	29	32	865	17	3204	78	4	696	108	40	997	144	22	7	116	282	49	39	78	84	60	151	10	149	14,210
Chevrolet	772	2560	20853	3063	53247	13901	5235	48578	21944	6698	43352	3480	8419	6851	14324	52852	3507	1959	14263	8556	8831	19601	1632	3706	753,483
Chrysler	182	335	3799	225	10578	1516	341	4295	1375	590	8241	857	500	402	909	3109	239	383	913	1507	855	1737	224	556	81,350
*Cord	3		30		137	1		50	14	1	56	11			1	6	3		2	16	1	6	1	3	671
De Soto	91	318	2205	201	5916	728	243	4152	765	362	4709	688	367	227	501	3613	231	203	642	984	624	1346	103	167	57,452
Dodge	265	342	3441	383	9105	1771	561	5415	3898	1037	7732	786	470	979	1702	6004	566	335	1581	1515	1516	2681	505	335	108,192
Durant	115	285	1015	167	2624	498	407	2615	494	1525	3245	180	115	803	402	1682	770	124	440	2178	368	1184	152	98	45,945
Essex	204	840	7073	204	18241	2211	602	16726	1687	1281	16246	1260	705	851	1793	3683	863	929	2262	2302	1946	5971	395	1243	185,993
Ford	1275	3714	29631	3989	74705	27483	9874	78379	35848	12188	73421	4705	14787	10659	22796	79819	5960	2761	23195	17274	12136	31092	2663	7709	1,258,236
Franklin	17	95	726	5	2076	53	9	635	114	110	1165	171	33	8	81	271	43	25	56	124	41	214	10	87	10,277
Gardner	1	3	99		190	1		127	6	30	161	16			20	23	2			5	7	48	1	4	1,988
Graham	44	214	2365	102	6626	314	256	4159	667	399	4890	572	100	353	559	1809	356	224	460	734	758	1675	54	516	58,531
Hudson	148	237	2652	77	6949	828	154	4473	656	421	5034	328	342	218	366	1192	271	353	565	791	420	2023	143	339	60,618
Hupmobile	25	112	2405	29	5984	241	64	3104	474	254	4393	278	145	274	470	1167	181	154	582	608	283	668	69	392	42,420
Jordan	6	19	107	1	363			315	13	1	413	11	1		5	52			10	13	32	27	1	17	2,101
La Salle	35	55	1136	25	3189	120	15	847	232	76	1701	257	42	17	239	439	45	75	139	135	134	199	17	164	19,394
Lincoln	5	9	253	8	1283	39	9	365	50	36	367	40	10	2	48	127	13	5	33	44	50	72	3	65	5,853
Marmon	26	155	871	42	2747	119	153	1840	143	173	1990	134	87	102	82	638	62	57	220	267	317	465	61	221	21,479
Nash	114	601	5815	160	15749	635	581	5757	1281	682	8352	731	260	567	1008	2753	414	656	759	1124	859	4205	326	653	101,920
Oakland	30	121	1345	51	3339	433	196	2192	748	281	2554	143	184	140	221	1177	81	104	415	369	280	1069	39	228	30,724
Oldsmobile	95	349	3550	158	9781	781	459	8625	942	707	7398	446	337	993	669	2378	318	296	709	1342	815	2973	219	755	87,208
Packard	54	161	3061	33	8213	243	45	2496	489	165	4573	353	102	64	363	698	124	134	354	348	252	562	24	433	43,097
Peerless	7	14	543		1104	11	1	1463	42		1022	117		2	5	131		34	57	58	27	155	3	201	7,954
Pierce-Arrow		12	718	2	1712	7	3	390	121	43	927	133	4	2	64	310	7	26	54	50	45	178	39	84	8,057
Plymouth	86	333	2246	279	6759	1277	750	5115	1588	827	6779	520	559	1065	986	3900	249	512	1252	1774	1015	2907	328	235	82,319
Pontiac	91	552	4916	257	13629	2153	990	12642	3574	1241	10033	1104	930	1058	1452	6848	457	373	2167	1599	1358	5709	211	1129	154,192
Reo	13	99	670	28	1716	56	21	891	378	195	1281	350	48	62	119	1096	55	57	144	235	181	276	31	150	16,748
Studebaker	121	315	3920	195	10272	517	329	4958	1026	766	5930	534	195	560	1016	2840	285	302	602	1484	577	2354	172	515	80,110
Stutz		6	122	1	573	3	6	246	41	6	260	9	2	2	26	25	28	12	10	34	58	53	5	12	2,842
Viking	10	13	226	10	636	26	12	283	40	32	257	24	16	31	30	95	19	17	22	62	32	84	6	40	3,924
Whippet	81	562	3455	543	14212	2303	1646	14851	4780	886	10951	680	637	2151	2210	8741	487	770	2325	1485	1945	5193	331	398	159,451
Willys-Knight	29	161	1974	106	5456	186	271	3514	373	362	3207	334	28	223	178	978	138	185	275	657	308	827	65	166	36,378
Miscellaneous	11	40	514	18	1914	23	73	2049	125	69	1192	133	2	61	102	182	17	26	75	65	75	442	21	150	16,980
Totals	4368	13389	121006	10983	326583	60566	23861	252391	88144	32848	257170	20910	30234	29590	54670	196935	16423	11810	56524	50558	37454	100990	8392	22306	3,742,628

Overland Offers New Willys and Knight

(Continued from Page 1)

attract the owner-driver. A pleasing roominess in the interiors has been achieved by increasing the tread on all models to 58¼ inches, as well as by increasing the wheel bases over the corresponding cars of last year. The greater tread has provided wider seats, so that all models have full three-passenger-width seats. The increased interior space gives greater leg and head room. Adjustable seat backs are provided in the sedan models. Deeper seat cushions are used this year with individually wrapped springs. Non-shatterable safety glass may be had all around on all models at a slightly increased cost.

Brakes are now completely enclosed and are cable-controlled. A fuel pump has replaced the vacuum tank and the Float-O oil regulating device has been added as standard equipment on all models.

In the interiors of the new Willys-Overlands there will be noticed a new type of instrument panel, with a larger gasoline gage on the dash, a flush-type cowl ventilator and a platform type accelerator. On the exteriors attention is attracted to a number of new features. The radiator filler cap is on the inside. The design of the roof and visor has been modernized and there is a new treatment of the louvres in the hood. Garnished mouldings add to the appearance. A double drop frame is used and a larger fuel tank. Steel running boards are fitted. An improved all steel axle has been added and optional gear ratios are available. Other features emphasized by the manufacturer are: Optional paint jobs, a quieter second gear, easier gear shifting, insulated windows, one-bar bumper, double acting hydraulic shock eliminators and a flame arrestor is fitted to the carburetor.

There is a wide choice of bodies offered on all chassis. On the lowest priced car, the Willys six, Model 97, there are four body models offered on the 110-inch wheel base chassis. On the Willys six Model 98-D, also has four bodies. There is a standard Victoria and sedan, and a de luxe Victoria and sedan. The de luxe models are equipped with wire wheels, spares carried in fender wells, while the standard models have wood wheels with the spare carried in the rear. This chassis is also used for a one-half-ton commercial vehicle, and as such, lists at $395 for the chassis.

The Willys eight, 8-80 D, and the Willys-Knight six, 66-D, the highest priced car in the line, also have standard and de luxe Victoria and sedan models.

From a standpoint of speed and performance a speed of seventy-two miles per hour is claimed for the six, and seventy-five miles an hour for the eight. It is claimed that the Willys-Knight will do from seventy-five to eighty miles an hour. A speed of fifty miles per hour in second is claimed for the eight.

Double-drop frame construction features all of the Willys-Overland cars as well as the Willys-Knight. The effect of this is to increase the stability of the cars and it is the factor that has permitted the lowering of the lines of the car without reducing the head room. In fact, the latter dimension is increased on all the cars this year. Another important factor in the improved feel of the car is the reduced unsprung weight due to the use of the new drop-center wheels of both the wood and wire types.

The increased speed and acceleration in all lines produced by this maker has been paralleled by an increased amount of braking ability. The brakes are the duo-serve type with an appreciable degree of servo action. The use of the fully inclosed construction with the cable control is claimed to do away with rattles of the brake linkage and permits the wheels to be cut on a greater angle, thus reducing the turning radius.

One revision which has been made is the use of a compression member between the transmission and the brake cross shaft, increasing the efficiency of the brakes and also providing a greater degree of equalization. The movement rearward of the engine through its rubber mounting, coupled with the forward movement of the cross shaft, due to its natural spring when heavy brake pressures are applied to both of these elements, means that whether the pressures on the pedals be light or heavy, the same amount of brake pressure is applied on all four wheels, thus eliminating skidding tendencies.

The new brake system, coupled with the compression member, requires less pedal pressure for the same amount of braking, thus leaving greater pedal reserve and reducing the frequency of brake adjustment. An improved grease deflector is incorporated in the design of the brakes to reduce deterioration of the brake surface through the accumulation of grease.

Another feature of the new lines which is emphasized is the easier steering which has largely been accomplished through a change in the king pin construction. It is no longer possible for dust or dirt to enter the king pin through its exposed upper bearing. The weight of the car is carried on the roller bearing.

The steering wheels on all the cars have three spokes instead of four which gives greater visibility of the instruments. It is a steel-centered rubber-covered wheel and is consequently not subject to splintering. The angle at which the post is set is more acute than formerly so that it is more nearly in the horizontal plane and calls for less muscular action on the part of the driver. The attachment of the steering column to the frame is more rigid which also adds to the feeling of solidarity of the drive.

Felt washers are now incorporated in the spring shackles. These retain the lubricant and give a greater interval between oiling operations and also, because of the freedom of the shackle, contribute to the action of springs and the ease of riding.

The engine used in both sixes is practically identical with the power plant that captured first and second places in the annual Pikes Peak stock car race on Labor Day. It has a bore of 3¼ inches and a stroke of 3⅞ inches. With a piston displacement of 193 cubic inches it is claimed to develop 65 horse power at 3,400 revolutions per minute. The compression ratio is 5.26 to 1.

The eight-cylinder power plant has a bore of 3⅛ and a stroke of 4 inches. With a piston displacement of 245.4 cubic inches it develops 80 horse power at 3,200 revolutions per minute. The Willys-Knight engine, which is said to be the most powerful ever developed by this organization, has a bore of 3⅝ inches, a stroke of 4¾ inches, and piston displacement of 255 cubic inches. It develops 87 horse power at 3,200 revolutions per minute. The crankshaft, which weighs 67 pounds, is completely machined, ground and lapped. To increase the softness of the engine, all the compression ratios have been decreased by 1 per cent. It is stated that this has made a very apparent and gratifying change.

The six-cylinder engine, in spite of its reduced compression, is claimed to have greater "pep" because of the improved shape of the combustion chamber. On the new head the space between the top of the piston and the underside of the head has been increased so that there will not be interference due to carbon formations. On all models the big end of the connecting rod has been changed. The babbitt has been taken off the side faces so as to permit the steel of the rod to come closer to the crank. With the new construction the babbitt of the bearings is backed up firmly over the full length of the bearing with the result that its effectiveness is increased.

On the Willys six engine a new oil ring has been fitted which has cut down any tendency to pump oil, thereby reducing oil consumption and cutting down the tendency for carbon to form in the combustion chamber and on the top of the piston.

The Float-O oil device which has been incorporated on all models is for the purpose of providing a positive oil flow under all conditions, particularly when cold weather causes the oil to thicken. Normally the oil is sucked from the oil pan through a screen and suction bell, which is permanently attached as close to the bottom of the oil sump as possible, so that all the oil may be used. With the Float-O device the natural objections to this system are eliminated by having the suction bell and screen pivoted on an arm and normally resting or floating on top of the oil. As the oil decreases in volume the device follows it down.

With this device it is claimed that the clean oil on the top is always in circulation and the oil or sludge that accumulates in the bottom of the pan remains at rest. Generally in cold starting, the early revolutions of the enegine, when the oil is very heavy, will suck up through the pump all the oil contained in the suction bell and there may then result an interval of considerable duration before circulation is re-established, for the reason that the oil surrounding the suction bell is so heavy that it will not flow through the screen and the pump merely passes air instead of oil.

With the Float-O device, no matter how stiff the oil, the suction bell continues to eat its way down into the oil until it has reached the bottom of the pan and, in so doing, digs a hole into the practically solid grease, which hole is immediately filled with the oil that has been put in circulation. That oil, heated by its passage through the engine, readily finds its way to the suction bell, and the resulting increase in temperature of the circulating oil speedily raises the temperature of the rest of the lubricant, so that a normally full circulation is obtained and the float returns to its normal position. This device and the AC fuel pump are now standard on all models.

All the carburetors have been improved by the use of a new accelerator pump. The pump plunger is no longer a die casting, but is a thin brass stamping, so that seizure between the plunger and the pump bore is avoided through the elimination of the affinity of the metals. In addition, the shank of the plunger, instead of being a flat strip with holes pierced therein, now becomes a round shank fitting into a stuffing box, so that sand and dirt cannot get into the pump.

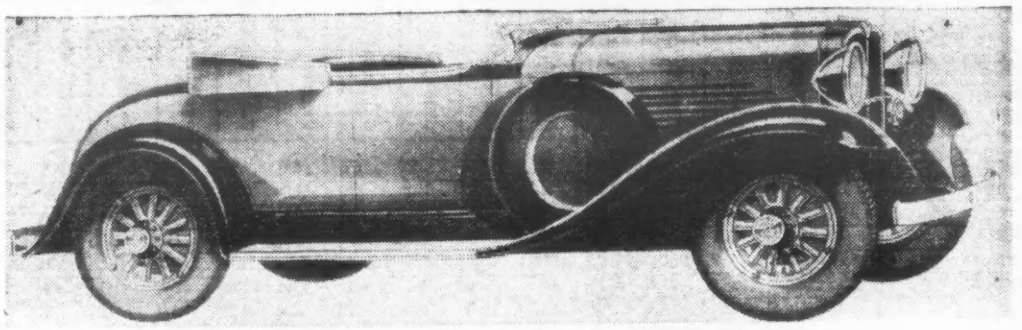
An entirely new float mechanism is used on the carburetor for the Willys six. It is claimed that in the forty to fifty-mile-an-hour range, this carburetor is about two miles to the gallon more economical due to the changes that have been made. All carburetors are fitted with flame arrestors to eliminate danger of fire from backfiring. A noise dampener has been applied to the rear of the carburetor on the Willys-Knight.

On the Willys sixes and eights a change has been made in the attachment of the front motorplate to the block so that loosening of the dowel screws is now nearly impossible.

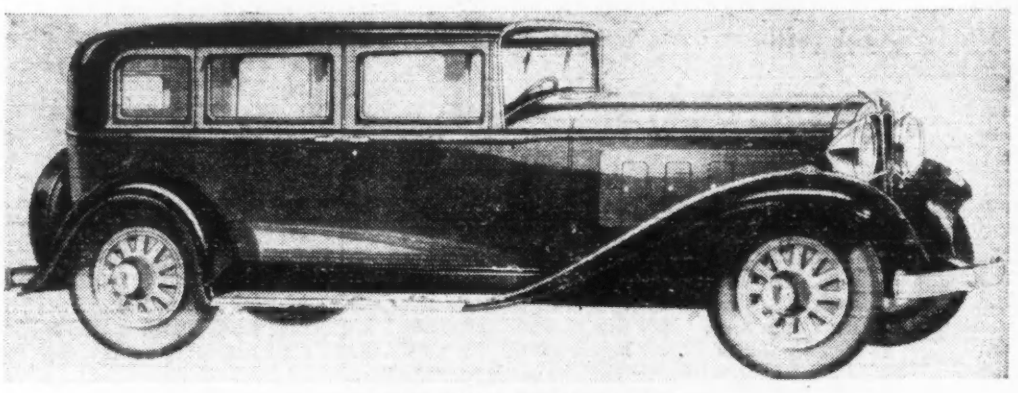
Clutch chatter has been eliminated on the 6-cylinder cars by angular tension tubes running from the engine legs to the frame and making starting in second free from the usual vibration.

Back pressure on the exhaust has been reduced by making the exhaust pipes straight. This is also claimed to add to the life of the valves. The support of the tail pipe is more

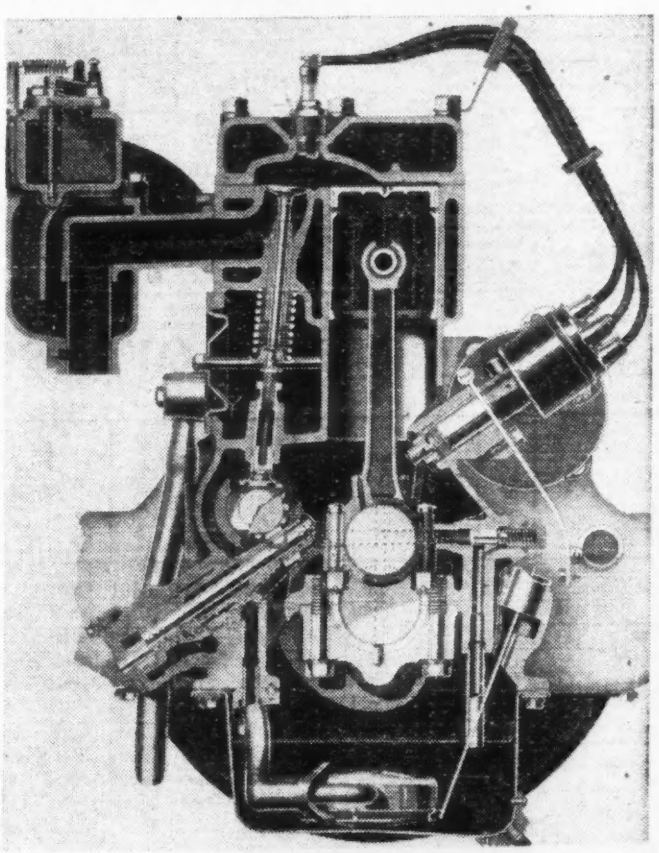
(Continued on Page 12)



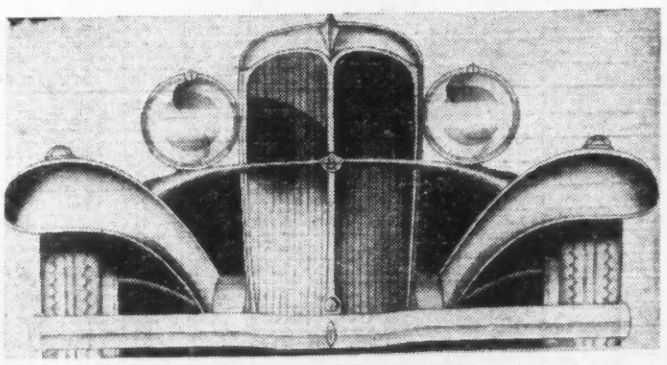
WILLYS 6 roadster on 110-inch wheelbase



WILLYS-KNIGHT standard sedan



FRONT SECTIONAL view of Willys 6 engine, showing new Floato-Oil device in oil pan



FRONT VIEW of 1931 Willys 8

Free Wheeling Included On New Studebaker Six

(Continued from Page 1)

the engine is the same as last year there have been a great many surface refinements. The valves have been moved from the left to the right side of the engine block. In this position they are far more accessible. The water pump and fan are now combined in a single unit on the front of the engine and driven by a V-belt in a triangular drive. The distributor, located on the left side of the engine block, is now operated through an angle drive from the camshaft. These changes greatly increase the life of the accessory drives, it is stated.

The new Studebaker Six engine is an L-head type with block-cast cylinders, developing 70 horsepower at 3200 r.p.m. The bore and stroke are 3¼ by 4⅛ inches, giving a piston displacement of 205 cubic inches. The connecting rods are 10½ inches long, of drop-forged steel. Shimless bearings are used, babbitted directly to steel. Rods and pistons are selectively assembled for balance.

Studebaker is one of the manufacturers that has adopted the rubber-driven vibration damper, claiming for it prolonged maintenance of accurate setting. This new damper and the heavy, counterweighted crankshaft which is both statically and dynamically balanced, plus the rubber engine mounting, are given credit by Studebaker for the greatly increased smoothness of this engine.

Silent chain drive is employed for the camshaft. The valves are made from special alloy steels—chrome nickel steel for intake and silchrome steel for exhaust—and are operated by mushroom type pushrods and cooled by ample water passages in the cylinder.

Lubrication is full-pressure feed to main, connecting rod and camshaft bearings from gear type pump with screen filter. Oil filter is used to insure clean oil at all times. As in other Studebaker engines, the oil need only be drained at 2,500-mile intervals.

A 1¼-inch single tube carburetor is used. High turbulence manifold controlled for seasonal variations in temperature is designed to insure efficient distribution of the incoming gasoline vapor and to contribute to fuel economy. Semi-automatic choke control prevents over-use of the choke and consequent dilution of oil in the crank case.

Ignition is Delco-Remy. Current is supplied by generator and 90-ampere hour Willard battery. The distributor is driven by an auxiliary shaft. Distributor head and spark plug wires are water-proofed with rubber caps. Starting is likewise Delco-Remy, with Bendix drive. The starter button is on the dash.

Gasoline is supplied to the carburetor by fuel pump equipped with a filter. A hydro-static gasoline gauge is located on the dash.

Cooling is by centrifugal pump, belt-driven in conjunction with the fan assembly. Tubular radiator is used. It is cooled by a four-blade fan on an adjustable mounting. The water pump, it is explained, keeps 3½ gallons of water in constant motion, circulating 38½ gallons per minute at forty miles per hour. A thermostatic control unit in the cylinder head retards the water flow until the motor has reached efficient operating temperature.

The clutch is a single plate dry disc type with torsional damper. Ten coil springs and fabric facings are employed to soften the shock of contact between driving and driven members.

Transmission is the new free wheel type through helical gears. It is a three speed set. The mainshaft is mounted on ball bearings. Countershaft gears are forged integrally.

Rear axle is floating with chrome molybdenum steel shafts. Timken roller bearings are used in front and rear wheels and steering knuckles. Minimum road clearance of the rear axle is 8⅞ inches. Drive is Hotchkiss type with tubular propellor shaft.

Springs are semi-elliptic, equipped with rattle-proof, self-adjusting spring shackles. Lovejoy hydraulic shock absorbers are standard front and rear. Brackets and clamps have been eliminated by a new system of mounting. Rubber bushings used at connecting link ends prevent noise and eliminate need for lubrication.

The steering gear is the Ross cam and lever type with a 15-1 reduction ratio, in conjunction with Timken roller bearings in the kingpins.

Two-shoe Duo-Servo four-wheel brakes, internal expanding, are equipped with molded lining. A safety hook-up permits the system to function even though control is severed or disconnected on one, two or three wheels. The emergency brake operates on all four wheels.

Double-drop frame design, four-point motor suspension, and strongly braced cross members are described as giving rigid foundation for the bodies on the new Studebaker six chassis. Mountings for bumpers are incorporated in the frame.

Heavy duty artillery type wood wheels are used on all but Regal models, which are equipped with six wire wheels. Tires are 5.25x19 inches, with an actual outside diameter of 30½ inches. Large tires are another factor responsible for the riding ease claimed for the new Studebaker six.

Six body types are offered on the 114 inch wheel base of the new six. These include a five-passenger, four-door sedan; Regal sedan for five; two-passenger business coupe; coupe for four with rumble seat; tourer and Regal tourer, both with folding top. Save for the business coupe and tourers, which are finished in leather, upholstery is mohair, with Bedford cord optional in the Regal sedan. Regal models are equipped with six wire wheels, two in front fender wells, and a folding luggage grid.

Body lines have been completely redesigned. The new radiator and body treatment conforms closely to that used on Studebaker's larger eight-cylinder models. It is equipped with the high turbulence air deflectors in the grid to provide for better air circulation.

The headlamp tie rod is out of sight in the radiator shell. Large headlights and a large, flat radiator cap and modern double-bar bumpers are used.

Bodies are of welded steel over hardwood foundation, designed to permit all-around visibility.

In addition to the new Studebaker Six with free wheeling, Studebaker's full 1931 line consists of three series of free wheeling eights: the President Eight of 122 h.p.; the Commander Eight of 101 h.p., and the new Dictator Eight of 81 h.p. Prices range from $1,095 to $2,600.

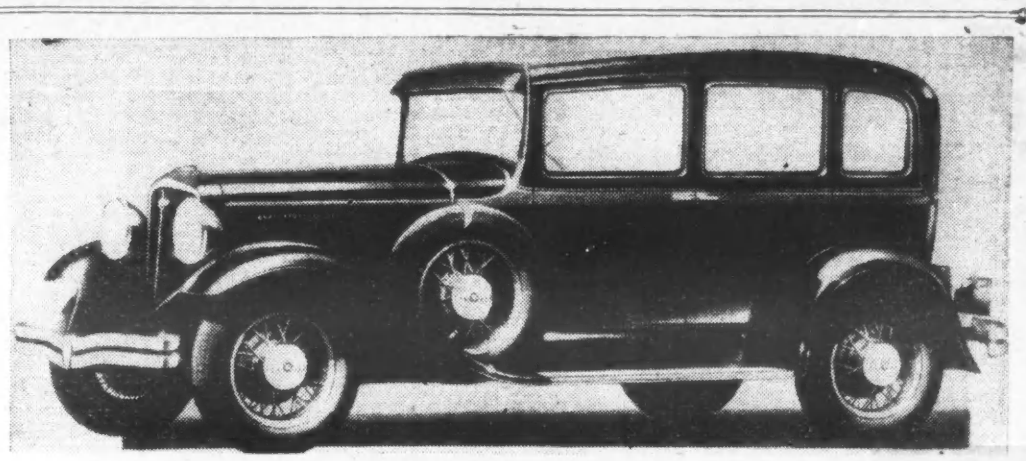
Twelve models are offered on the President chassis in two wheelbase series—130 inches and 136 inches; five models on the Commander chassis of 124 inch wheelbase and four models on the Dictator chassis of 114 inch wheelbase.

No change has been made in appearance with the exception of the Dictator Eight, in which the headlamp tierod has been incorporated out of sight in the radiator shell.

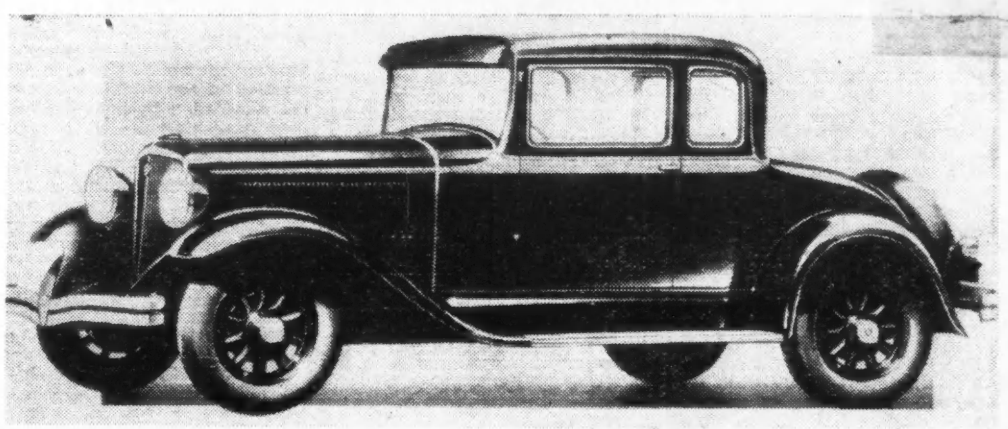
State and Regal models are equipped with six wire wheels and folding luggage grid. In addition, the broughams have a trunk. Interior furnishings are complete.

Engines throughout are straight eights of the L-head type, a design which Studebaker has consistently used. Bore and stroke are 3½x4⅜ inches for the President; 3 1-6 x 4¼ inches for the Commander, and 3⅛x3¾ inches for the Dictator, giving piston displacements of 337 cubic

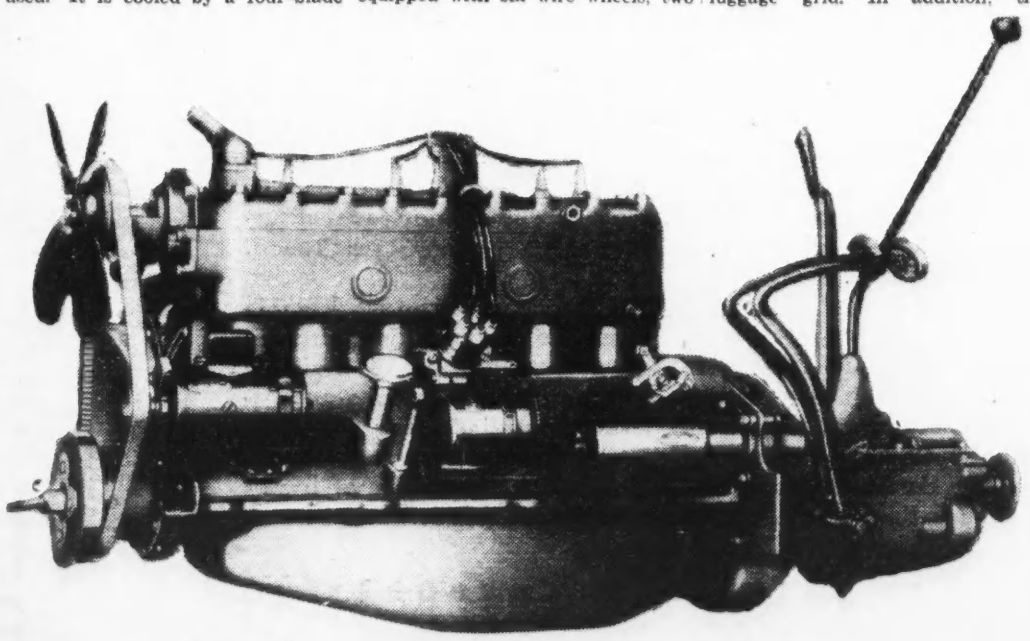
(Continued on Page 12)



STUDEBAKER 6 Regal sedan, 995



NEW Studebaker 6 coupe for four, $895



NEW Studebaker 6 engine

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WILLYS-OVERLAND OFFERS NEW LINES

(Continued from Page 10)

rigid, which should lessen detonation and loosening of the pipe.

On all models the radiator is filled from beneath the hood, and the filler cap is designed so that it can be removed without the hands coming into contact with the front of the radiator. Larger gasoline tanks are now provided on all models, and on all cars the handbrake lever is placed at the extreme left, so that the front compartment is free from interference. A platfrom-type accelerator replaces the button formerly employed, and the angle is such that the foot can readily be placed on the brake pedal.

Throughout the cars the attachments of various units has been strengthened. The fender shapes have been changed to add to the looks, as well as to give increased rigidity. The front fender bracket is of rigid construction, provided with a wide flange and attached to the frame by means of four bolts. It is carried out to the extreme end of the fender, to which it is attached through the medium of a separate bracket spot welded to the fender so that there will be no bolts or nuts in evidence.

There is an improvement in the tie bar attached to this bracket. There are three bolts so that the base of the supporting bracket to which the lamps are attached is of adequate size and the lamps as well as the fenders and bracket are all braced together.

The tire mountings are sturdier with more rigid brackets to support the fender wells and the wheels are stronger and deeper. An entirely new and more rigid carrier, not of the three-prong type, has been adopted for the cars that carry the spares on the rear. The running boards on all models are now all steel and the brackets are stronger and stiffer.

All windshields are of the slanting type to eliminate glare from behind. On the roadster and touring cars, the windshield will fold horizontally. The tops on these models also fold back horizontally to give the effect of a European phaeton. The Willys eight and Knight de luxe models are equipped with double windshield wipers and clocks set in the rear view mirror.

Finger tip control is again used. It has been made larger and smoother and of a type to conceal the hexagon nut on the top of the steering post. The wiring harness is now designed so that there are no exposed wires leading from lamps, horn or any other part of the car. The eight and the Knight are equipped in their front compartments with heat and noise insulating mats or jute, about ½-inch thick covered with molded cardboard for appearance. One key fits all locks and all models, except the 110-inch wheelebase, unit rubber covered brake and clutch pedals are provided.

IMPROVING REAR VIEW OF CARS

(Continued from Page 7)

following motorists. It will be noted by keen observers that many 1931 models exemplify the care and thought expended upon the problem of cleaning up the tail end. True, at the Olympia Show, it was the special bodies of coach builders which gave evidence of particular study, but that is only part of the chain of events, for it seems to be the invariable order of things that specialized bodies of high-lass producers later become the standard of the car manufacturer.

"Instance the two-door sports coupes which existed in various examples long before the type became standardized by car makers. Thus, possibly the greatest change in the appearance of bodies of modern type applies to the tail view, where the difficult problem of accommodating the spare wheel or wheels is being seriously tackled in conjunction with a clean homogeneous appearance, arrived at by merging the fenders with the luggage container. Ugly gaps and projecting parts are disappearing, even at the expense of accessibility."

ALLIED MOTOR INDUSTRIES IN STRONG CASH POSITION

New York, Dec. 31.—Statement of Allied Motor Industries, Inc., as of October 31, 1930, shows current assets of $1,617,918 and current liabilities $711,647, as compared with $1,971,938 and $530,212, respectively, on December 31, 1929. Cash and cash resources aggregated $214,337, against $572,047. Net worth on October 31, last, was $5,129,382, compared with net worth of $5,449,892 on December 31, 1929.

OTHER FINANCIAL NEWS

METEOR MOTOR CAR

Meteor Motor Company reports for the ten months ended October 31, 1930, net profit of $49,156 after charges and Federal taxes, equal to $1.17 a share on 42,000 shares of no-par capital stock. This compares with $40,972, or 97 cents a share, in corresponding ten months of 1929. On October 31, last, current assets, including $160,587 cash, amounted to $302,414 and current liabilities $40,237.

The General Tire and Rubber Company has declared an extra dividend of $1 on the common stock, payable January 1 to stock of record December 20.

General Tire for year ended November 30, 1930, reports profit after charges and after deducting approximately $1,000,000 inventory depreciation, but before Federal taxes, of $732,597, according to William O'Neil, president.

Sales for the fiscal year amounted to $24,072,000, as compared with $27,200,000 in preceding year.

EX-CELL-O OFFERS NEW DEVICES

(Continued from Page 7)

proper. The indexing for the remaining two operations is accomplished in the same manner.

The bushing plate is stationary, and is provided with a large chip chute fastened directly above the chip pan, which provides ample room for accumulation of chips during a long run. A manifold is attached to the bushing plate, which is provided with individual nozzles for furnishing the coolant directly to each cutting tool. The coolant returns by the chip pan to a sump, which is provided in the base of the machine.

AUTOMOBILE DISTRIBUTION DECLINES IN NOVEMBER IN CHICAGO DISTRICT

Chicago, Dec. 31.—November automobile distribution in the Seventh Federal Reserve District suffered the usual seasonal decline from October, and in comparison with November a year ago showed no betterment over preceding months.

Stocks of new cars in dealers' hands remained very light, while those of used cars gained slightly for the second consecutive month, though continuing lower than a year ago.

Deferred payment sales of twenty-seven dealers averaged 49 per cent. of their total retail sales for the month, which compares with 48 per cent. in October and 60 per cent. for last November.

NEW FACTORY WAREHOUSE

Shreveport, La., Dec. 31 (UTPS).—The Adolphus Auto Hotel at 520 Edwards St. has been appointed factory warehouse distributor for Kelly-Springfield tires. The territory covers Shreveport, north Louisiana and east Texas.

FREE WHEELING ON NEW STUDEBAKER 6

(Continued from Page 11)

inches, 250 cubic inches and 221 cubic inches respectively. Pistons of Bohnalite and connecting rods are matched in sets for balance. Dual carburetion and manifolding are used. Air, gas and oil filters are fitted to render engines dirt-proof. Live rubber mountings are used in engine supports.

The new carburetor silencer is designed to provide a new degree of engine quietness.

Easy steering is obtained by a Ross cam and lever steering gear of the new self-righting type and reduction of the steering ratio. On completing a turn, the front wheels have a distinct tendency to return to the straight-ahead position of their own accord.

In President and Commander eights this ease of control is further augmented, it is said, by a kick or swing shackle located on the left front spring horn to eliminate the possibility of shimmy and prevent road shocks being transmitted to the steering wheel.

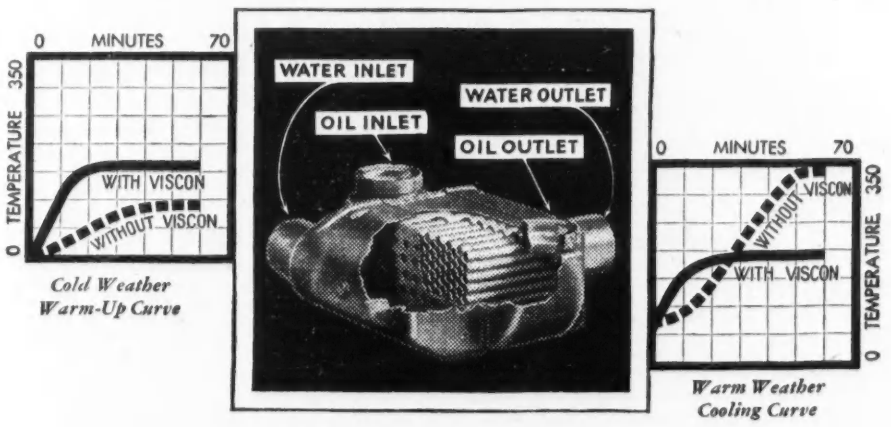
HARRISON PRESENTS

THE HARRISON

VISCON

OIL TEMPERATURE REGULATOR

introducing viscosity control



Cold Weather Warm-Up Curve

Warm Weather Cooling Curve

The Harrison Viscon (VIScosity CONtrol) is a device which regulates the temperature and thus controls the viscosity of the oil in gasoline engines. It is a small Harrison Radiator, enclosed in a sturdy metal housing and connected with both the water cooling and the oil pressure lubricating systems. The lubricating oil and the water flow through passages at right angle to each other, separated by copper walls of high heat conductivity. Continuous transfer of heat from the hotter stream to the cooler equalizes oil and water temperatures within 15 or 20 degrees, resulting in (1) a quicker oil warm-up in cold weather, (2) uniformly lower oil temperature in warm weather, and (3) more power and better lubrication (even at sustained high speeds) all year 'round.

The Harrison Viscon is adaptable to automobile, truck, bus, airplane or marine engines and is available to manufacturers who are interested in eliminating one more annoying uncertainty and providing an extra guarantee of owner satisfaction. Inquiries are invited.

HARRISON RADIATOR CORPORATION

LOCKPORT, NEW YORK